BMJ Open

Realist Evaluation of the impact, viability and transferability of an alcohol harm reduction support program based on mental health recovery : The Vitae Study protocol

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2022-065361
Article Type:	Protocol
Date Submitted by the Author:	02-Jun-2022
Complete List of Authors:	Martin-Fernandez, Judith; ISPED; ISPED STEVENS, Nolwenn; university bordeaux Moriceau, Sarah; Université de Bordeaux Serre, Fuschia; Université de Bordeaux Blanc, Hélène; Santé! Organization Latourte, Emmanuelle; Santé! Organization Auriacombe, Marc; Sanpsy, cnrs USR 3413, Addiction Team; SANPSY, CNRS USR 3413, Addiction Team Cambon, Linda; ISPED; CHU
Keywords:	PUBLIC HEALTH, MENTAL HEALTH, Substance misuse < PSYCHIATRY

Realist Evaluation of the impact, viability and transferability of an alcohol harm reduction support program based on mental health recovery : The Vitae Study protocol

Judith Martin-Fernandez*[,1,2], Nolwenn Stevens*[,1,2], Sarah Moriceau [2,4,5], Fuschia Serre[2,4,5], Hélène Blanc[6], Emmanuelle Latourte[6], Marc Auriacombe[2,4,5], Linda Cambon [1,2,3,7]

[1] MéRISP Team, INSERM Bordeaux Population Health Research Center, UMR 1219, CIC1401-EC, University of Bordeaux, ISPED, 33000, Bordeaux, France.
[2] University of Bordeaux, ISPED, F-33000 Bordeaux, France
[3] CHU, Bordeaux, France
[4] Addiction Team Phenomenology and Determinants of Appetitive Behaviors, Sanpsy CNRS USR 3413, Bordeaux, France
[5] Pôle Addictologie et Filière Régionale, CH Charles Perrens and CHU de Bordeaux, Bordeaux, France.
[6] Santé! Organization, Marseille, France
[7] Chaire de prévention ISPED/SPF, Université de Bordeaux, Bordeaux, France

*: First co-authors

Corresponding author: Judith Martin-Fernandez
Mob.+33664701772 / judith.martin-fernandez@u-bordeaux.fr

Abstract

Introduction:

Addiction is considered a chronic disease associated with a high rate of relapse as a consequence of the addictive condition. Most of the current therapeutic work focuses on the notion of relapse prevention or avoidance and the control of its determinants. Since only a small portion of patients can access alcohol addiction treatment, it is crucial to find a way to offer new support towards safe consumptions, reductions or cessations. The Harm Reduction approach and mental health recovery perspective offers another way to support the patient with alcohol addiction. Vitae is a realist evaluation of the impact, viability and transferability of the IACA! Program, a Harm

Reduction program based on the principle of psychosocial recovery for people with Alcohol Use Disorders.

Methods and analysis:

The Vitae study adheres to the theory-driven evaluation framework where the realist evaluation method and contribution analysis are used to explore the effects, mechanisms, and influence of context on the outcomes and to develop and adjust an intervention theory. This study is a 12-month, multi-case, longitudinal descriptive pilot study using mixed methods. It is multi-centered and national, and carried out in 10 addiction treatment or prevention centers. In this study, outcomes are related to the evolution of alcohol use at 12 months after the start of IACA! and the beneficiaries' trajectory during these 12 months in terms of psychosocial recovery.

Ethics and dissemination:

From a public health point of view, this study will explain and pinpoint the precise impact of IACA and identify the conditions for this impact. It will allow us to define the key functions and eventually to define a guideline to disseminate IACA! to other centers. From a research viewpoint, our proposed methodology is consistent with the bottom-up approaches advocated in health promotion, starting with a real-world response to a pressing problem.

'Strengths and limitations of this study

- Consistent with bottom-up approaches, our study is a realist evaluation based on a natural experiment.

- Mobilizing mixed-models methods this study is an innovative way to evaluate the impact, viability and transferability of a complex intervention (IACA!) moreover in the Harm Reduction field.
- Mobilizing multiple modes of data collection: interviews with 4 samples, observations and questionnaires, this study will provide a thorough knowledge about this intervention.

Introduction

SCIENTIFIC CONTEXT AND ISSUES

In 2016, an estimated 80,000 people died of alcohol-attributable cancer, and about 1.9 million years of life were lost due to premature mortality or disability in the EU (1). Alcohol use is a well-known risk factor of disease and injury (2, 3). A large contribution to this burden is Alcohol Use Disorders (AUDs)[i] and Alcohol Dependence (AD) (4). In France, in 2015, more than 27,000 and almost 8% of all new cancer cases were estimated to be attributable to alcohol, whereas they were estimated to be 5.8% worldwide in 2012 (5) . Heavy drinking was responsible for 4.4% of all new cancer cases (6) and was the second leading cause of so-called preventable cancers (7). A recent review also showed that, worldwide, alcohol use can explain up to 27% of the socioeconomic inequalities in mortality (8).

Subjects with alcohol addiction (or alcohol use disorders) are known to experience a range of social harms because of their own excess drinking, including family disruption, employment problems, criminal convictions, and financial problems (9). Assessments of these problems are scarcer, but social-cost studies give some hints of the alcohol-attributable consequences in selected countries (10, 11).

Addiction is considered a chronic disease (12, 13) associated with a high rate of relapse as a consequence of the addictive condition. In this perspective, treatment, whatever the addiction, aims to obtain and maintain abstinence, or at least a significant reduction

[i] Defined as alcohol dependence and harmful use of alcohol (see International Classification of Disease tenth revision (ICD-10))

in use or a controlled consumption, by avoiding situations presenting the risk of relapse and through the management of craving. Most of the current therapeutic work focuses on the notion of relapse prevention or avoidance and the control of its determinants (13-15) .

Since only a small portion of patients can access alcohol addiction treatment, it is of paramount importance to find a way to offer new support towards safe consumptions, reductions or cessations. The Harm Reduction (HR) approach and mental health recovery perspective offers another way to support the patient with alcohol addiction. HR refers to interventions that aim to reduce the adverse health and socio-economic consequences of substance use without focusing on abstinence, reduced use or addiction management (16). The HR approach is based on:

- Suspension of the moral judgment on uses;
- The implementation of a proximity approach, based on reaching people who use alcohol "where they are" (going to them or through outreach, implemented through mobile teams, street work or even intervention in a festive environment) and, on the other hand, on the unconditional reception of people "where they are" with their current consumption (i.e., without any requirement for a commitment to stop drug use or to a care or integration approach);
- The participation, from a community health perspective, of people who use drugs in the development and implementation of interventions and the recognition of their knowledge of the experience (knowledge of products and their effects, use practices, consumption scenes, lifestyles and peer group codes, ability to define and relay low-risk practices)

In some respects, this concept is very similar to that of mental health recovery (17), which articulates cure and care, autonomy and dependence, vulnerability and capacity. It is a non-medical process of getting better, clinically, socially and functionally. It aims at seeking and supporting the person's resources to build solutions. This process focuses on the positive transformations that the person experiences when recovering and the environmental factors that facilitate or hinder them (18).

Even though this is not their primary objective, HR and mental health recovery are likely to influence the severity of addiction and relapse.

Since 2013 the organization Santé! (Marseille, PACA region, France) has developed a risk and harm reduction program (IACA!) based on the principle of psychosocial recovery used in the "Housing First" program (19) for people with AUD. This program aims to reintegrate the person with problem alcohol use into a path of care, by removing the psychological contributors to medical and social isolation (shame, guilt, feeling of failure), stabilizing alcohol use (sometimes including access to alcohol) and providing security and support for psychosocial recovery. The IACA! intervention has already shown its effects on alcohol consumption in the center where it was implemented and is now being extended to new sites. In order to assess the conditions under which such an intervention is deployed in other centers and how its initial effect is generalizable, we developed the Vitae study. This pilot study is a realist evaluation of the impact, viability and transferability of the IACA! program. This pilot study will be used to collect data prior to implementation of a fully controlled effectiveness trial.

Methods

This protocol is consistent with the SPIRIT 2013 Statement : Defining standard protocol items for clinical trials.

AIM, DESIGN AND SETTING OF THE STUDY

Aim of the study

The IACA! intervention proposes intervention likely to secure factors that are predictive of relapse (feelings of dissatisfaction, anxiety, stress management, family and social support, etc.), thus facilitating spontaneous cessation while promoting the well-being of individuals. The IACA! intervention has already shown its effects on alcohol consumption in the center where it was tested. The question now is to confirm the results observed over the last two years and to explain them in a perspective of scaling up. As the IACA! intervention was only tested in one center, operating on an associative model and not on a care model, the question arises as to its transferability. For this reason, we decided to conduct a pilot study (20) prior to an effectiveness trial.

The aims of the present study are:

- to evaluate the transferability of IACA! to various centers that take care of people that have problems related to excessive alcohol use (addictions treatment centers and/ or psychosocial support centers (10 different treatment centers in the Nouvelle-Aquitaine and PACA regions, see Supplementary table 1) in terms of results.
- To assess the conditions of transferability, included viability, of IACA! in these 10 centers

- To evaluate the feasibility of a multi-centered controlled efficacy trial

Theoretical framework

Transferability is the extent to which the measured effectiveness of an applicable intervention could be achieved in another setting (21). It depends on multiple factors such as population and stakeholders' characteristics, contextual factors, modalities of intervention deliverance and the modalities and conditions of implementation (22). When studying transferability, an analysis of viable validity is also essential (23). As defined by Chen, viability evaluation "assesses the extent to which an intervention program is viable in the real world. More specifically, it evaluates whether the intervention:

- Can recruit and/or retain ordinary clients,
- Can be adequately implemented by ordinary implementers
- Is suitable for ordinary implementing organizations to coordinate intervention-related activities,
- Is affordable,
- Is evaluable, and
- Enables ordinary clients and other stakeholders to view and experience how well it solves the problem."(23)

The Vitae study adheres to the theory-driven evaluation framework (24-27) where the realist evaluation method and contribution analysis (28, 29) are used to explore the effects, mechanisms, and influence of context on the outcomes and to develop and adjust an intervention theory. This case-study method will help to set out the contribution "story": in light of the multiple factors influencing the result, does the

intervention contribute to an observed result and in what way?(28).This method is intended to provide "an in-depth view of how things work”(24).

In realist evaluation, developed by Pawson and Tilley (30), the effectiveness of the intervention depends on the underlying mechanisms at play within a given context. The realist evaluation is about identifying context-mechanism-outcome configurations (CMOs). The aim is to understand how and under what circumstances an intervention works. A middle-range theory (i.e., a theory that is aimed at describing the interactions between outcomes, mechanisms, and contexts) is set out to highlight the mutual influences of intervention and context (31, 32).

Hence, the evaluation is about identifying middle-range theories. Hypothesized and validated by empirical investigations, these CMO configurations help to understand how an intervention brings about change, bearing in mind context and target group (31, 32). The recurrence of CMOs is observed in successive case studies or in mixed protocols, such as realist trials (32). Indeed, to consider context, realist evaluators observe in successive cases what Lawson (quoted by Pawson in 2006 (33)) calls demi-regularities of CMOs (i.e., regular although not necessarily permanent occurrences of an outcome when an intervention triggers one or more mechanisms in a given context) (32). Studying these recurrences in different contexts allows the isolation of key elements that are replicable in a family of contexts. This gives rise to middle-range theories that become stronger as progress is made through the cases. “These middle-range theories, in certain conditions, predict possible intervention outcomes in contexts different from the one in which the intervention was tested” (32).

Applied to our case

As the realist principle is suitable for studying non-linear interactions in complex systems, we adopted this approach. The intervention under investigation applies to an operational program and it is therefore important to identify its key functions (34, 35), i.e., its interventional or contextual components underpinning its effectiveness.

Where usually viability and transferability are studied with scales that list attributes and criteria in order to rate or to ease the transferability of an intervention (21, 36, 37), we chose to mobilize the realist evaluation. Indeed, studying transferability and viability through the theory-driven lens will generate a dynamic and precise analysis of the IACA! intervention because "theory-based evaluation is demonstrating its capacity to help readers understand how and why a programme works or fails to work. Knowing only outcomes, even if we know them with irreproachable validity, does not tell us enough to inform programme improvement or policy revision. Evaluation needs to get inside the black box and to do so systematically"(26).

In this study, each institution deploying the IACA! program, with its own context, will constitute a case. For each case, the intervention will be studied to identify the mechanisms at play in the given context along with the variation in outcomes. CMO configurations will be identified through an analysis of each case. A cross-case analysis will highlight recurrent CMO configurations and thus identify key features for possible replication.

In our study, outcomes are related to the evolution of alcohol use at 12 months after the start of IACA! and the beneficiaries' trajectory during these 12 months in terms of psychosocial recovery.

Drawing on the literature and on the experience of professionals delivering the intervention, we will first set out initial middle-range theories (30, 33), which we will test in each case (i.e., centers) by collecting qualitative and quantitative data (32).

The mechanisms will be identified qualitatively according to the definition of Ridde et al.: "a mechanism is an element of reasoning and reaction of an agent with regard to an intervention productive of an outcome in a given context" (38, 39). It " characterizes and punctuates the process of change and hence, the production of outcomes" (40).

Contextual elements will be included among all the elements collected qualitatively that satisfy the following definition: elements located in time and space that may affect the intervention and the outcomes produced, and whether they relate to the centers, the professionals, the beneficiaries, or the operational setting. In a realist approach, interventional elements are part of the context. Therefore, we can distinguish between Ci (for Contextual factors linked to the Intervention) and Ce (for Contextual factors not linked to the intervention, i.e., external factors).

THE IACA! INTERVENTION AND ITS IMPLEMENTATION

The IACA! Intervention

Created in 2013 in Marseille by an addictology professional and a social support professional, the association Santé! in the PACA region is developing a risk and harm

reduction approach for people who consume alcohol, based, among other things, on the principle of psychosocial recovery as used in the " Housing First" program (19).

The intervention, called IACA!, aims to reintegrate the person into a healthcare pathway by removing the barriers that cause medical and social isolation (shame, guilt, feelings of failure), stabilizing the person's use and ensuring their safety, and supporting their psychosocial recovery. As shown in Figure 1 and depending on the person's needs, the intervention aims to:

1/ Provide advice, reassurance, listening, appeasement

2/ Secure and/or reorganize consumption in order to avoid periods of withdrawal syndrome (vulnerability factors)

3/ Activate rights to maintain/obtain appropriate and satisfactory social integration

4/ Provide psychological support

5/ Adapt, build and coordinate a health path (to avoid break-up or non-recourse)

6/ Promote social links,

7/ Consolidate long-term alcohol consumption strategies and

8/ IF REQUESTED: Accompaniment for a cessation experiment.

Figure 1 : Management process implemented by Santé !

This support is organized in 4 sequences:

1st phase - **Reception/ Build the alliance**: unburden people in relation to their issues (lifting shame): valuing their strategies without judging their consumption; Inform and define the IACA! support in a break with traditional support

2nd phase – **Securing:** with the person, identify the situations that reinforce consumption and act on them: Securing consumption to avoid risk situations (stress, periods of lack, dehydration, etc.); Avoiding peaks in consumption; Ensuring basic needs such as food, hydration, safety, sleep, etc.

3rd phase (in parallel with or following phase 2) – **Stabilization**: support a project and reconstruction objectives over several months; Stabilize consumption; Re-engage the person in a care pathway adapted to his needs and projects; Tackle social, family and professional isolation, and secure the environment by identifying a set of professionals needed to solve the main difficulties identified.

4th phase - **Progressive reduction of support**: monitoring with regard to sustainability and autonomy; Checking that the support is satisfactory

The initial results of this program over one year were promising since, of the 17 people who received the intervention, all had a social or health benefit, and 13 of these benefits were associated with stabilization (n=4), reduction (n=7) or cessation (n=2) of alcohol use after one year. Thus, in addition to the positive results in terms of psychosocial recovery, and even if the goal is not the cessation of alcohol consumption, the program is potentially promising since it sometimes leads to the cessation of consumption and secures/reduces consumption for half of the people (back to occasional consumption). The program therefore initially provides what is

recommended in any attempt to quit, which could explain this spontaneous reduction or cessation.

Implementation in 10 new centers:

The 10 centers will be supported by Santé! in the implementation of IACA! according to the following procedures:

- Training of 10 pairs of professionals (2/center) in charge of accompanying beneficiaries in the centers
- Anchoring an alcohol RH support practice: Support for the implementation and adaptation of the IACA! method within each center
- Adaptation and improvement: changes to the IACA! method and its tools

STUDY DESIGN

This study is a 12-month, multi-case, longitudinal descriptive pilot study using mixed methods (quantitative and qualitative). It is multi-centered and national, and carried out in 10 addiction treatment or prevention centers (4 in the PACA region and 6 in the Nouvelle-Aquitaine region). These sites, all in the health and social sector, are heterogeneous (see Supplementary Table 1) in their aims, organization and target populations. Among the 10 centers there are 5 CSAPAs (addiction treatment, support and prevention center providing information, medical, psychological and social evaluations of requests and needs, and orientation), 1 CAARUDs (Reception and Accompaniment Centers for Harm Reduction for Drug Users), 4 CHRS (accommodation and social rehabilitation centers) and 1 IML (inter-mediation rental program).The CSAPAs have a target population which is less vulnerable than that of the other centers.

Indeed, most of the CSAPAS receive users who, although they may be followed up by care, whether specialized in addictology or not, generally have more problematic and less "controlled" uses than the general population. They also often live in more precarious social situations.

CHARACTERISTICS OF PARTICIPANTS

To validate the implementation of IACA! and highlight the conditions of transferability of this program, we will collect data from three types of population:

- Individuals receiving support from the IACA! Intervention (called beneficiaries),
- Professionals implementing the IACA! Intervention, i.e., the pairs in charge of accompanying the beneficiaries in the centers as well as the persons in charge of these centers,
- Professionals from Santé! supporting the deployment of the IACA! intervention.

The beneficiaries are all persons integrating the program in the project's partner sites and who consume alcohol.

The professionals will be specialized educators, social workers, nurses, social and solidarity economy advisors, etc.

The inclusion criteria will be as follows:

- For the beneficiaries: Being over 18 years old, willing to participate, having started the IACA! Program 15 days beforehand or less, and being followed up by one of the 10 centers in the study. Beneficiaries will be excluded if they have a severe somatic or psychiatric pathology that is incompatible with a good understanding of the assessment tools; if they have difficulty understanding

and/or writing French; if they are unreachable by telephone; if they are participating in another research project with an ongoing exclusion period; if they are placed under court protection; and if they are pregnant.

- For professionals from centers implementing IACA!**:** Having been trained at IACA!, willing to participate, and working in the centers participating in the implementation of IACA!
- For the professionals in charge of the centers: having participated in the implementation of the IACA! method in their centers, and willing to participate
- For the SANTé! professionals

  Participating or having recently participated in the implementation of IACA!

DATA COLLECTION

In order to collect information from multiple complementary sources we will use quantitative and a qualitative data collection methodologies:

Quantitative Data:

The aim is to collect longitudinal data concerning the effects of IACA!. The effects of IACA! involve quality of life, mental health recovery and alcohol consumption.

All participants who meet the eligibility criteria will be offered participation in the study. The centers' professionals will inform patients being treated with IACA! of the existence of the VITAE study and the possibility of participating in it. A meeting will then be organized between the patients and the research team, in order to offer them the opportunity to participate in this research and to inform them of:

- The purpose of the study,

- The computerized processing of data on the participant that will be collected in the course of this research, and his/her rights of access to, opposition to and rectification of this data.

The Baseline M0 will then be schedule (maximum 15 days after starting the IACA! Program)

Supplementary Table 2 shows the different data that will be collected on 100 patients (10 per center), prospectively, by trained clinical research staff. During the baseline inclusion (M0), participants will be interviewed using:

- The Addiction Severity Index (ASI),
- The Treatment Service Review (TSR),
- The Mini International Neuropsychiatric Interview (MINI),
- The Empowerment Scale

At each follow-up, participants will be assessed with a follow-up ASI, TSR interview, craving assessment and empowerment scale.

The Addiction Severity Index is a semi-structured interview designed to assess impairments that commonly occur due to substance-related disorders (41). A modified and validated 45-minute French version of the ASI will be used to take into account tobacco and addictive behaviors (42). The ASI explores six areas that may be affected by addiction: medical status, employment/support status, substance and behavioral addiction, family and social relationships, legal status, and psychological status. These data are used to generate Composites Scores (CSs) for each domain, thereby reflecting the severity of the subject's condition. CSs range from 0 to 1, with a worsening severity as the scores move closer to one. (43-45).

ASI will be used at inclusion and then every 3 months during the 12-month intervention period.

Mini International Neuropsychiatric Interview (MINI):

The Mini International Neuropsychiatric Interview is a structured diagnostic interview providing a standardized assessment of 18 major psychiatric disorders defined according to Axis I DSM-IV (anxiety disorders, mood disorders, psychotic disorders, addictive disorders, eating disorders) and the diagnosis of antisocial personality disorder (46, 47). A 30-minute version of MINI adapted for DSM-5 criteria will be used.

Craving Evaluation Scale:

The craving evaluation scale developed by the University of Bordeaux Addiction Team in the SANPSY Laboratory will be used. It is a 5-minute hetero-evaluation of craving for all substances and addictive behaviors manifested now or in the past. This tool explores the frequency of craving, corresponding to the number of days craving was reported over the last 30 days, as well as the mean and maximum intensity on a scale ranging from 0 (no craving) to 10 (extreme craving).

Treatment Service Review (TSR):

The Treatment Service Review, 6th version, is an inventory of the medical, psychosocial and psycho-educational contacts of the subject over the last 30 days (48, 49). This instrument allows a quantitative evaluation of the effective medico-psycho-social management of a subject. It was validated in French, and is now integrated into the ASI evaluation as it was developed by the same group that developed the ASI.

Empowerment scale:

The Empowerment Scale measures personal empowerment by examining the concepts of hope, social acceptance and quality of life (50, 51). It is a 28-item scale with 4 points each, ranging from "Strongly Disagree" to "Strongly Agree". The total empowerment score is a quantitative variable, ranging from 28 to 112. This scale can be divided into sub-dimensions measuring self-efficacy and self-esteem, power and powerlessness, community activism and autonomy, optimism and control over the future, and righteous anger.

Supplementary Table 2 shows the different data that will be collected.

Qualitative Data

Supplementary Table 3 shows the different data that will be collected. We will identify: skills field, functioning principles, contextual conditions of success, delivering conditions of success, mechanisms, and contextual elements (including techniques). The data collected will help to elaborate the principles of initial middle-range theories (to establish how the intervention works in context), and mechanisms hypothesized as key functions of IACA!. We will monitor these different data in each center implementing IACA! to verify their integrity in target centers and to verify the initial theories (contribution analysis).

To perform this collection, we will cross two qualitative investigation methods: non-structured interviews and observations:

Non –directive interviews with the centers' professionals (20 interviews)

This investigation will be performed in all centers implementing IACA. We will conduct this investigation almost 9 months after the beginning of implementation. A total of 20

interviews will therefore take place over the study period. From these professionals, the data collection will be focused on the data described in Supplementary table 3.

Non –directive interviews with the SANTé! professionals

Interviews with santé! professionals supporting the implementation of IACA! in the 10 investigated centers (3 interviews). We will carry out this investigation almost 6 months after the beginning of implementation. From these professionals, the data collection will be focused on the data described in Supplementary table 1.

Observations (10 observations)

In addition to interviews with professionals, one observation per center will be conducted, making a total of 10 observations. The objective is to collect the following physical contextual elements, specific to each center, presented as being potentially key. These observations will be based on an observation grid. These investigations will be performed after 6 months of implementation.

Non- directive interviews with beneficiaries (100 interviews)

We will perform this qualitative investigation on the beneficiaries included in the IACA! Program (10 per center). A total of 100 interviews will be conducted. This qualitative investigation will be performed between 9 and 12 months after beginning the IACA program. The data collected will be focused on the data described in Supplementary table 3 (i.e., mechanisms, contextual conditions of success, delivering conditions of success).

To avoid social desirability bias, we will conduct unstructured surveys. Thus, open-ended questions will be asked to the professionals and beneficiaries. The interview grids and observation log will be designed and pre-tested during exploratory interviews and observation sessions at the beginning of the study.

PATIENT AND PUBLIC INVOLVEMENT

The Vitae study does not include any patient or public involvement in terms of setting research priorities, defining research questions or outcomes, providing input into the study design, or disseminating the results. The research participants are called upon to answer questionnaires or interviews.

DATA ANALYSIS

Quantitative data

Quantitative evaluations repeated every 3 months will serve to identify the impact of this intervention on the main judgment criterion (i.e., the evolution of the severity of alcohol use at 12 months after the start of IACA) and to describe the subjects and their evolution over 12 months.

A descriptive analysis will be performed to describe the severity of the subjects' alcohol use after 12 months of intervention. This evolution of the severity of alcohol use corresponds to the delta of composite scores between M12 and M0. The variables alcohol consumption, alcohol craving and severity of addiction will be described over the 12 months of the intervention in relation to the initial assessment. They will also be compared between centers.

Qualitative variables will be described according to their frequency and percentage. Quantitative variables will be described according to their means and standard deviations.

Secondly, to determine the factors impacted by the intervention, we will perform repeated analyses of variance to determine whether the variables have changed during the intervention. For the variables showing a change, we will use a comparison test on repeated measures controlling for sociodemographic variables: age, gender, work in the last 3 years, presence or absence of current mood and anxiety disorders, and the center in which the intervention was carried out (applying the Bonferroni correction). All statistical analyses will be performed with the JMP software (version Pro 15.2.0, SAS Institute Inc., North Carolina).

Qualitative data

A content analysis by case and inter-case (centers) will be conducted. Content analysis encodes, classifies and ranks the communication in order to examine its patterns, trends or distinguishing features, in our case the recurrence of C-M configurations. The N'vivo® software will be used for this, allowing us to conduct a thematic analysis of the 3 data sources.

The analysis performed by center, by validating or allowing CMO adjustments, will have to answer 4 questions:

Question 1 - In what contextual and delivery conditions does IACA! seem to produce an impact on patients? By impact we mean the targeted goals presented within the intervention section.

Question 2 – To what extent is IACA! feasible and acceptable in the routines of professionals in the different centers?

Question 3 – What elements considered as key are actually adaptable (and therefore are non-key)?

Question 4 – What elements are mandatory to help to implement IACA!? What elements should be included in a transfer scheme?

The answers to these questions will allow us to highlight the hypothetical key functions (CMO configurations) defined with Santé! for each center by identifying i) the degree of integrity of the key functions in each center, and ii) the degree of adaptation in each center. We will perform monographies, providing a specific description of all key functions in each center. The timeline (Figure 2) presents the key steps of the Vitae study.

QUAN/QUAL analysis

We will then conduct a QUAN/QUAL (52) analysis in each center in order to compare: the results observed on patients in terms of psychosocial recovery and consumption (collected by quantitative questionnaire) and the implementation or completeness of the IACA! intervention, the contextual conditions, the principles of operation and support, and the professional skills needed in the transfer scheme.

ETHICS AND DISSEMINATION

Despite a high prevalence of addiction in the general population, the worldwide proportion of individuals with addictions who access addiction treatment is estimated to be less than 25% overall, and under 10% for alcohol and tobacco, including in

France (53, 54). A recent meta-analysis identified an average dropout rate of 30% for psychosocial substance use disorder treatment and a 26% dropout rate for programs targeting alcohol (55). The low rate of access to alcohol addiction treatment and the high level of drop-out after relapse could be explained by barriers such as the stigma associated with addiction or the desire to try to cope alone. In addition, many patients do not have access to treatment, or drop out from treatment due to the pre-requisite of a period of inpatient detoxification (53, 56, 57). This study will contribute to scaling up a potentially effective intervention for the management of tens of thousands of patients currently in a therapeutic impasse.

Our study will face some challenges and limitations, since it will start during the COVID 19 crisis which is impacting the follow-up and involvement of the people with AUD and the professionals. Therefore, we anticipate a significant risk of attrition during the study due to the turnover of staff and the discontinued monitoring of the beneficiaries while the intervention is being dispensed.

Secondly, all our results are declarative and the Vitae study will not use any kind of biological or medical information. Although declarative data could lead to underestimation, the use of a hetero-administered questionnaire on substance consumption should reduce this under-declaration (58).

From a public health point of view, this study will explain and pinpoint the precise impact of IACA and identify the conditions for this impact. It will allow us to define the key functions and how they work in different contexts or how they could be adapted, and eventually to define a guideline to disseminate IACA! to other centers and adapt it.

From a research viewpoint, our proposed methodology is consistent with the bottom-up approaches advocated in health promotion, starting with a real-world response to a pressing problem (23). Transferability and viability studies are still underused in France, even though their pertinence has been highlighted in the international literature. Here, we propose an application of these international recommendations relative to the transferability and evaluation of complex health interventions. Mobilizing the realist evaluation to analyze the transferability and the viability of an intervention is quite innovative, and will produce thorough and precise knowledge on this program. This pilot study will evaluate the feasibility and the pertinence of a multi-centered controlled efficacy trial. It will use the feedback from the teams conducting the evaluation and the interviews with center managers or directors. These elements will allow us to establish: the size of the sample needed to conduct a trial; the integrity and relevance of the evaluation protocol and of the data collection tools used in this trial; and the randomization, recruitment and consent procedures.

Transferability of complex health interventions is a major public health topic and remains a highly valuable research field. This study, focusing on an innovative intervention for people with AUD implemented in very different contexts will provide valuable information for the implementation science but also for the HR field. The results of this study will contribute to informing public decision-making in terms of support for people with AUD. In addition, it will contribute to the preparation of a large-scale trial and, ultimately, to the scaling up of an effective intervention for the management of people with psychosocial problems related to excessive alcohol use.

Ethics approval and consent to participate

The Vitae project will be carried out with full respect of current relevant legislation (e.g. the Charter of Fundamental Rights of the EU) and international conventions (e.g. Helsinki Declaration). It follows the relevant French legislation on interventional research protocols involving the human person (Jardé law, category 3 research on prospective data (59)).
The protocol (version 1.2) was approved on Mach 2021 by the Comité et Protection des Personnes (CPP) i.e. Committee for the Protection of Persons Ouest V n°: 21/008-3HPS and was reported to the Agence Française de Sécurité Sanitaire des Produits de Santé (ANSM) i.e. the French National Agency for the Safety of Health Products. This research has been registered on ClinicalTrials.gov (No. NCT04927455). The research project is registered in the European database (No. ID-RCB 2020-A03371-38).
All participants who meet the eligibility criteria will be offered participation in the study. Professionals at the centers will inform patients being treated with IACA! of the existence of the VITAE study and the possibility of participating in it. A meeting will then be organized between the patients and the SANPSY research team, in order to offer them to participate in this research and to inform them of :
- The purpose of the study,
- The computerized processing of data concerning the participant that will be collected during the course of this research and his/her rights of access, opposition and rectification to this data.
For patients under a protective measure (i.e.: curatorship, tutorship, ...), the legal representative will also be informed by the Vitae team:
- Of the purpose of the study,
- Of the computerized processing of data concerning the participant that will be collected during this research and his/her rights of access, opposition and rectification to this data.
If the person agrees to participate, he or she gives oral consent (as it is specified by the Jardé law and accepted by the ethics committee (59)) and his or her non-opposition is documented in the participant's medical record or file. The participant may, at any time, object to the use of his or her data in the context of the research.
These information will also be given to the legal representative if the patients are under guardianship.

References

1. Rehm J, Shield KD. Alcohol Use and Cancer in the European Union. European Addiction Research. 2021;27(1):1-8.
2. Organization WH. Global status report on alcohol and health 2018: World Health Organization; 2019 2019.
3. Stanaway JD, Afshin A, Gakidou E, Lim SS, Abate D, Abate KH, et al. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 2018;392(10159):1923-94.
4. Rehm J, Shield KD, Gmel G, Rehm MX, Frick U. Modeling the impact of alcohol dependence on mortality burden and the effect of available treatment interventions in the European Union. European Neuropsychopharmacology. 2013;23(2):89-97.
5. Praud D, Rota M, Rehm J, Shield K, Zatoński W, Hashibe M, et al. Cancer incidence and mortality attributable to alcohol consumption. International Journal of Cancer. 2016;138(6):1380-7.
6. Shield KD, Marant Micallef C, Hill C, Touvier M, Arwidson P, Bonaldi C, et al. New cancer cases in France in 2015 attributable to different levels of alcohol consumption. Addiction. 2018;113(2):247-56.
7. Soerjomataram I, Shield K, Marant-Micallef C, Vignat J, Hill C, Rogel A, et al. Cancers related to lifestyle and environmental factors in France in 2015. European Journal of Cancer. 2018;105:103-13.
8. Probst C, Kilian C, Sanchez S, Lange S, Rehm J. The role of alcohol use and drinking patterns in socioeconomic inequalities in mortality: a systematic review. The Lancet Public Health. 2020;5(6):e324-e32.
9. Casswell S, Thamarangsi T. Reducing harm from alcohol: call to action. The Lancet. 2009;373(9682):2247-57.
10. Rehm J. The Risks Associated With Alcohol Use and Alcoholism. Alcohol Res Health. 2011;34(2):135-43.
11. Rehm J, Mathers C, Popova S, Thavorncharoensap M, Teerawattananon Y, Patra J. Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. The Lancet. 2009;373(9682):2223-33.
12. McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA. 2000;284(13):1689-95.
13. Auriacombe M, Serre F, Denis C, Fatséas M. Diagnosis of addictions. The routledge handbook of the philosophy and science of addiction: Routledge; 2018. p. 132-44.
14. Fatseas M, Auriacombe M. Principes de la thérapeutique et des prises en charge en addictologie. Abrégé d'addictologie. Masson ed. Paris: Lejoyeux M ed; 2009. p. 62-8.
15. Principles of drug addiction treatment: A research-based guide (Third Edition). National Institute on Drug Abuse; 2018. Report No.: 1437926762.

16. Lenton S, Single E. The definition of harm reduction. Drug Alcohol Rev. 1998;17(2):213-9.
17. Ellison ML, Belanger LK, Niles BL, Evans LC, Bauer MS. Explication and Definition of Mental Health Recovery: A Systematic Review. Administration and Policy in Mental Health and Mental Health Services Research. 2018;45(1):91-102.
18. Davidson L, Roe D. Recovery from versus recovery in serious mental illness: One strategy for lessening confusion plaguing recovery. Journal of Mental Health. 2007;16(4):459-70.
19. Watson DP, Shuman V, Kowalsky J, Golembiewski E, Brown M. Housing First and harm reduction: a rapid review and document analysis of the US and Canadian open-access literature. Harm Reduction Journal. 2017;14(1).
20. Thabane L, Cambon L, Potvin L, Pommier J, Kivits J, Minary L, et al. Population health intervention research: what is the place for pilot studies? Trials. 2019;20(1):309.
21. Wang S, Moss JR, Hiller JE. Applicability and transferability of interventions in evidence-based public health. Health Promot Int. 2006;21(1):76-83.
22. Cambon L, Minary L, Ridde V, Alla F. Transferability of interventions in health education: a review. BMC Public Health. 2012;12:497.
23. Chen HT. The bottom-up approach to integrative validity: a new perspective for program evaluation. Eval Program Plann. 2010;33(3):205-14.
24. Chen HT. Theory-driven evaluations. Newbury Park, CA: Sage Publications; 1990 1990. 326 p.
25. Stame N. Theory-Based Evaluation and Types of Complexity. Evaluation. 2004;10(1):58-76.
26. Weiss CH. Theory-based evaluation: Past, present, and future. New Dir Eval. sept 1997;1997(76):41-55.
27. De Silva MJ, Breuer E, Lee L, Asher L, Chowdhary N, Lund C, et al. Theory of Change: a theory-driven approach to enhance the Medical Research Council's framework for complex interventions. Trials. 2014;15:267.
28. Mayne J. Contribution analysis: Coming of age? Evaluation. 2012;18(3):270-80.
29. Mayne J. Addressing Attribution through Contribution Analysis: Using Performance Measures Sensibly | Better Evaluation. The Canadian Journal of Program Evaluation. 2001 2001;Sect. 16(1).
30. Pawson R, Tilley N. Realistic Evaluation: SAGE Publications; 1997 1997/06/23/. 260 p.
31. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist review--a new method of systematic review designed for complex policy interventions. J Health Serv Res Policy. 2005;10 Suppl 1:21-34.
32. Blaise P, Marchal B, Lefèvre P, Kegels G. Au-delà des méthodes expérimentales: l'approche réaliste en évaluation. 2010.
33. Pawson R. Evidence Based Policy: A Realist Perspective. SAGE Publications Ltd ed2006 2006.
34. Hawe P, Shiell A, Riley T. Complex interventions: how "out of control" can a randomised controlled trial be? BMJ. 2004;328(7455):1561-3.
35. Hawe P, Shiell A, Riley T. Theorising Interventions as Events in Systems. Am J Community Psychol. 2009;43(3):267-76.

36. Cambon L, Minary L, Ridde V, Alla F. [A tool to facilitate transferability of health promotion interventions: ASTAIRE]. Sante Publique. 2014;26(6):783-6.
37. Schloemer T, Schröder-Bäck P. Criteria for evaluating transferability of health interventions: a systematic review and thematic synthesis. Implementation Science. 2018;13(1):88.
38. Lacouture A, Breton E, Guichard A, Ridde V. The concept of mechanism from a realist approach: a scoping review to facilitate its operationalization in public health program evaluation. Implementation Science. 2015;10(1):153.
39. Ridde V, Robert E, Guichard A, Blaise P. L'approche réaliste à l'épreuve du réel de l'évaluation des programmes. The Canadian Journal of Program Evaluation. 2011;26(3):37.
40. Cambon L, Terral P, Alla F. From intervention to interventional system: towards greater theorization in population health intervention research. BMC public health. 2019;19(1):339.
41. McLellan AT, Kushner H, Metzger D, Peters R, Smith I, Grissom G, et al. The fifth Edition of the addiction severity index: Historical critique and normative data. J Subst Abuse Treat. 1992;9(3):199-213.
42. Denis C, Fatseas M, Beltran V, Serre F, Alexandre JM, Debrabant R, et al. Usefulness and validity of the modified Addiction Severity Index: A focus on alcohol, drugs, tobacco, and gambling. Substance abuse. 2016;37(1):168-75.
43. McLellan T, Carise D, Coyne TH, Jackson TR. Addiction Severity Index - 5th edition. 2019.
44. Has. AddictionSeverity Index - Adaptation française. 2019.
45. Denis C, Fatséas M, Beltran V, Serre F, Alexandre J-M, Debrabant R, et al. Usefulness and validity of the modified addiction severity index: a focus on alcohol, drugs, tobacco, and gambling. Substance abuse. 2016;37(1):168-75.
46. Sheehan DV, Lecrubier Y. The Mini International Psychiatric Interview - Plus (MINI-Plus) 2004.
47. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry. 1998;59 Suppl 20:22-33 (quiz 4-57).
48. Cacciola JS, Alterman AI, Lynch KG, Martin JM, Beauchamp ML, McLellan AT. Initial reliability and validity studies of the revised Treatment Services Review (TSR-6). Drug Alcohol Depend. 2008;92(1-3):37-47.
49. McLellan AT, Alterman AI, Cacciola J, Metzger D, O'Brien CP. A new measure of substance abuse treatment. Initial studies of the treatment services review. J Nerv Ment Dis. 1992;180(2):101-10.
50. Rogers ES, Chamberlin J, Ellison ML. Measure empowerment among users of mental health services. Psychiatric services. 1997;48(8):1042-7.
51. Rogers ES, Ralph RO, Salzer MS. Validating the empowerment scale with a multisite sample of consumers of mental health services. Psychiatric Services. 2010;61(9):933-6.
52. Creswell J, Plano Clark v. Designing and Conducting Mixed Methods Research (3rd ed.). 3rd ed: SAGE Publications; 2017 2017.

53. Cohen E, Feinn R, Arias A, Kranzler HR. Alcohol treatment utilization: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. Drug and Alcohol Dependence. 2007;86(2-3):214-21.
54. Rehm J, Allamani A, Elekes Z, Jakubczyk A, Manthey J, Probst C, et al. Alcohol dependence and treatment utilization in Europe - a representative cross-sectional study in primary care. BMC Fam Pract. 2015;16:90.
55. Lappan SN, Brown AW, Hendricks PS. Dropout rates of in-person psychosocial substance use disorder treatments: a systematic review and meta-analysis. Addiction. 2020;115(2):201-17.
56. Cunningham JA, Sobell LC, Sobell MB, Agrawal S, Toneatto T. Barriers to treatment: why alcohol and drug abusers delay or never seek treatment. Addict Behav. 1993;18(3):347-53.
57. Grant BF. Barriers to alcoholism treatment: reasons for not seeking treatment in a general population sample. Journal of studies on alcohol. 1997;58(4):365-71.
58. Denis C, Fatséas M, Beltran V, Bonnet C, Picard S, Combourieu I, et al. Validity of the self-reported drug use section of the Addiction Severity Index and associated factors used under naturalistic conditions. Substance use & misuse. 2012;47(4):356-63.
59. Gorphe P, Jannin C. Regulatory aspects of prospective and retrospective clinical research in France in 2018. Eur Ann Otorhinolaryngol Head Neck Dis. 2019;136(2):103-8.

Authors' contributions

JMF and NS drafted this article and all authors revised the manuscript. The project design was developed by LC and MA. JMF, NS, SM, FS were involved in implementing the project and in developing the evaluation design, under the supervision of LC and MA. HB and EL were in charge of the design and the implementation of the IACA! Intervention. All authors read and approved the final manuscript.

Competing interests statement

The authors declare that they have no competing interests.

Funding statement

This research has received funding from two national recognized research agency; the INCa and the IRESP. These funding has been obtained via two national competitive peer reviewed grant application processes, respectively named "2019 Call for projects- Population health intervention research: Addressing all dimensions of cancer control" (No. CAMBON-2020-004) and "2019 Call for projects: Tackle the addictions to psychoactive substances" (N°CAMBON IRESP-19-ADDICTIONS-05) .

List of abbreviations

AD: Alcohol Dependence

ANSM: "Agence Française de Sécurité Sanitaire des Produits de Santé"; the French National Agency for the Safety of Health Products

ASI : The Addiction Severity Index

AUD: Alcohol Use Disorders

CAARUD : Reception and Accompaniment Centers for Harm Reduction for Drug Users

CHRS : accommodation and social rehabilitation centers

CMO: context-mechanism-outcome

CPP: "Comité de Protection des Personnes"; Committee for the Protection of Person

CSAPA: addiction treatment, support and prevention center providing information, medical, psychological and social evaluations of requests and needs, and orientation

HR: Harm Reduction

IML: inter-mediation rental program

MINI: The Mini International Neuropsychiatric Interview

TSR : Treatment Service Review

Vitae: Pilot Study to Evaluate Impact and Transferability of an Alcohol Focused Harm Reduction Support System Based on Mental Health Recovery Named IACA!

Word count : 5068

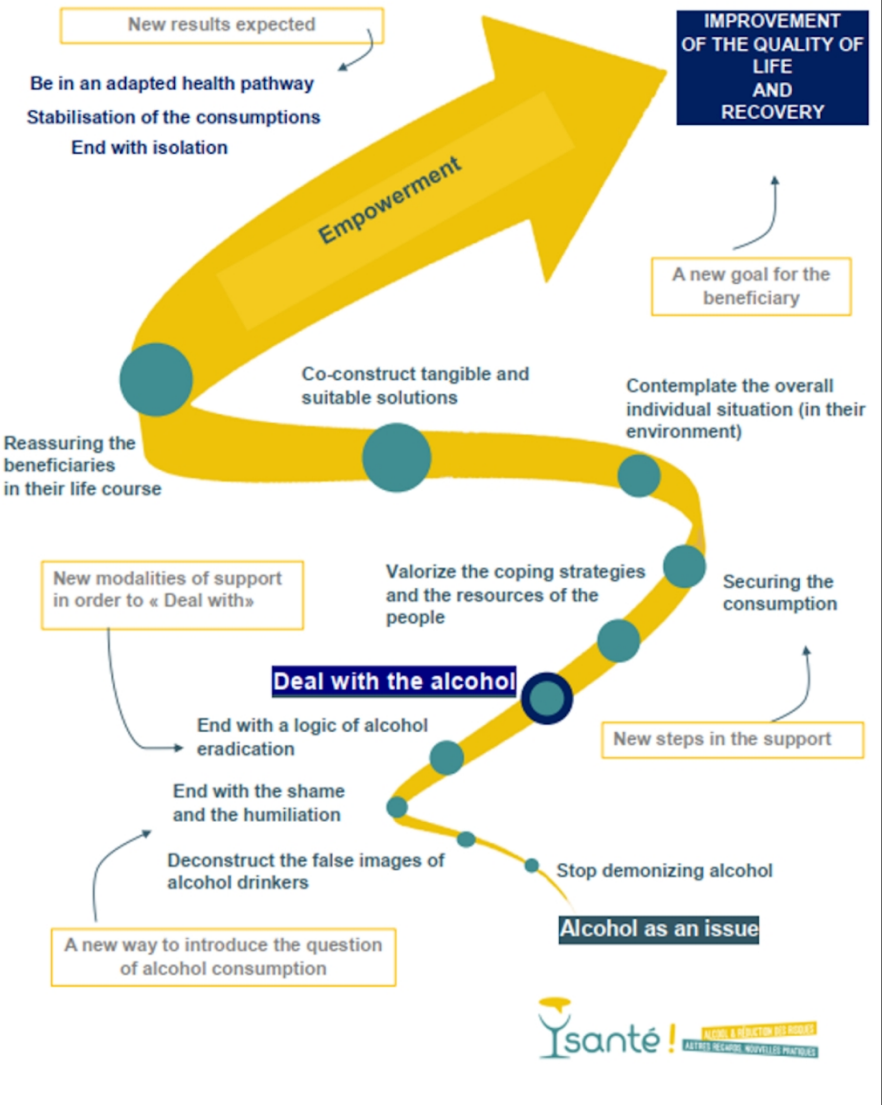

Figure 1: Management process implemented by Santé !

127x170mm (300 x 300 DPI)

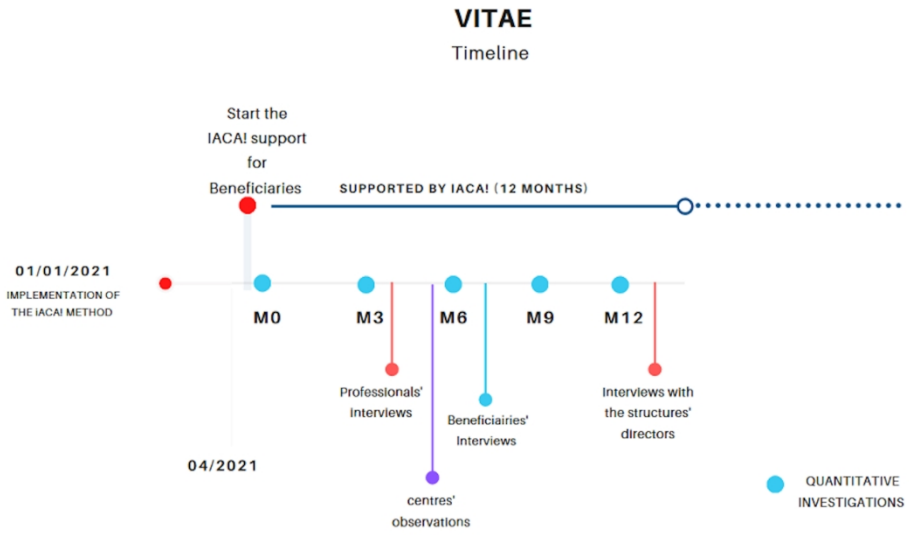

Figure 2: Vitae Timeline

160x86mm (300 x 300 DPI)

Supplementary Table 1 : List of the centers involved in the Vitae study

Location	Name of the structure	Type of the structure
Nouvelle Aquitaine	Centre la Source Addictions -Mont de Marsan	CSAPA, CAARUD
	Sauvegarde - AGEN	CSAPA
	CEID Addictions (ACT)- Bordeaux	CSAPA
	Domercq SOS – Bordeaux	CHRS
	Association AJIR inclusion – Pau	CHRS
	Association le Lien - Libourne	CHRS
PACA	Casanova – Marseille	CSAPA
	Maison Jaune - Arles	CSAPA
	Insertion La Selonne - Marseille	CHRS
	Soliha - Marseille	IML

Supplementary Table 2 : Variables included in the quantitative investigations

Public	Variables	Questionnaire	Data collection	Time Collection	Population
Beneficiaries	Medical status Employment/support status Substance and behavioral addiction (year of use, number of units use per day, etc.) Family and social relationships Legal status Psychological status	Addiction Severity Index	semi-structured interviews	April 2021 - April 2022	10 centers 10 beneficiaries / centers
	Inventory of the medical, psychosocial and psycho-educational contacts of the subject on the last 30 days	Treatment Service Review			
	Frequency and intensity of craving during the last 30 days for each substance used regularly	Craving Evaluation Scale			
	Assessment of major psychiatric disorders: anxiety disorders, mood disorders, psychotic disorders, addictive disorders and eating disorders)	Mini International Neuropsychiatric Interview			
	Assessment of personal empowerment	Empowerment scale			

Supplementary Table 3 : Data expected in the transferability and viability study and time of collection

Public	Variables	Data collection	Time Collection	Population
Centers and professionals	**Support principles:** Overall support / all dimensions Possibly intensive support Action focused on consumption practices and contexts in a very detailed way (how the person consumes) Unconditional accompaniment with the reality of consumption Adjustment of support to the person's decision-making capacities/security Acting pragmatically to achieve a result ("here and now") Use consumption as a lever Make the team's availability explicit according to the needs of/being at the service of the person: Surround the person with the human, material and institutional resources necessary for his or her care journey, social environment and quality of life Reception of people with alcohol consumption, without any condition of change of consumption; Free approach to alcohol consumption, people's life strategies and skills; Possible offer of alcohol during the accompaniment Positioning affirmed in a break with the traditional system / No control or weaning proposal No abandonment, no judgment, respect/kindness, trust, alliance	Observation W[illegible] interviews	October 2021r-April 2022	10 centers 3 professionals/ centers

Professionals	**Professional skills:** Knowledge of the effects of the social norm on life courses Knowledge and experience of the drinking public Skills: • talking about alcohol; • to develop a project/prioritize areas of intervention for people; • observation (identification of the person's needs, benefits, risks, understanding ways of drinking); • to co-construct a program / to seek concrete solutions; • action-research methodology for support (risk-taking/creativity and project/rigor) - experimenting with people; • to sensitize/mobilize partners and resource structures; • alert and monitoring (vigilance on the overall health of people) - anticipation; • to mobilize resources from people; • to interact in a benevolent manner; to coordinate pathways/organizations Knowledge and experience of existing measures necessary to support the person who drinks alcohol (including health) Capacity to: • reinterview his place and role as a professional in the relationship; • propose an accompaniment of a "resultant" or interventional nature; • look more at resources than deficits; welcome in a friendly atmosphere; • maintain constant support (remains anchored in the program/stability); • adapt; convey an optimistic and reassuring vision of the future	Observation Professio v o interviews	October 2021r-April 2022	10 centers 3 professionals/ centers

	Knowledge and experience of situations of social exclusion, discrimination, and lack of care pathways Willingness to work closely with people to integrate their expertise into their own intervention modalities Motivation / desire for involvement Versatility			
Centers and professionals	**Functioning principles:** **External coordination/regulation** **Internal feedback coordination** **Small ratio of people**	Observation interviews	October 2021r-April 2022	10 centers 3 professionals/ centers
Centers and professionals	**Contextual environment (micro and macro)** **Political will to fight against legal and illegal drugs, including DDR** **Financial support** **Precise inventory of the health system's offer likely to surround the person/ network of close partners made up of addictology care structures** **Support and regulations favorable to the intervention**	Observation Prof v interviews	October 2021r-April 2022	10 centers 3 professionals/ centers 1 centers
Professionals and beneficiaries	**Delivery conditions:** **Activities** **Travel to the person's place of residence with work on the rhythm and gestures of daily life** **Staging of the reception (scenography)**	Observation interviews v interviews	October 2021- April 2022	10 centers 3 professionals/ centers

	Co-construction and co-production of approaches to access to care and rights and, more generally, administrative procedures **Decryption of/guidance on the health system and identification of environmental resources** **Telephone contacts (follow-up appointment, maintaining the link, taking news, etc.)** **Logistical preparation / material support (purchase of food, alcohol, etc.)** **Physical accompaniment to medical appointments, with other professionals or with family and friends** **Regular and close individual interviews, but scheduled at a pace to be determined with the person**			
Mechanisms	**Variables**	Data collection	Time Collection	Population
PSYCHOLOGICAL FUNCTIONING:	**Self-acceptance; Personal growth; Autonomy positive relationship; Control of your environment; Meaning of life**	v □□ □ interviews Observations Professionals □ interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centers 3 Santé! Professionals
EMOTIONAL WELL-BEING	**Positive affect; Quality of life**	v □□ □ interviews	October 2021- April 2022	10 centers

		Observations □ □ □□ □□□ interviews		100 beneficiaries 3 professionals/ centers 3 Santé! Professionals
CAPACITIES	**Motivation: Self-determination; Stress management; Putting alcohol in its right place; Effective adaptation strategy**	v □□ □ interviews Observations □ □ □□ □□□ interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centres 3 Santé! Professionals
SOCIAL FUNCTIONING:	**Social discounting; Social acceptance; Social contribution; Social coherence; Social integration** **Family and social support**	v □□ □ interviews Observations □ □ □□ □□□ interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centers 3 Santé! Professionals

SPIRIT 2013 Checklist: Recommended items to address in a clinical trial protocol and related documents*

Section/item	Item No	Description		Page
Administrative information				
Title	1	Descriptive title identifying the study design, population, interventions, and, if applicable, trial acronym	√	1
Trial registration	2a	Trial identifier and registry name. If not yet registered, name of intended registry	√	2
	2b	All items from the World Health Organization Trial Registration Data Set	NA	
Protocol version	3	Date and version identifier	√	28
Funding	4	Sources and types of financial, material, and other support	√	29
Roles and responsibilities	5a	Names, affiliations, and roles of protocol contributors	√	1 And 30
	5b	Name and contact information for the trial sponsor	√	1
	5c	Role of study sponsor and funders, if any, in study design; collection, management, analysis, and interpretation of data; writing of the report; and the decision to submit the report for publication, including whether they will have ultimate authority over any of these activities	NA	
	5d	Composition, roles, and responsibilities of the coordinating centre, steering committee, endpoint adjudication committee, data management team, and other individuals or groups overseeing the trial, if applicable (see Item 21a for data monitoring committee)	NA	
Introduction				
Background and rationale	6a	Description of research question and justification for undertaking the trial, including summary of relevant studies (published and unpublished) examining benefits and harms for each intervention	√	4-6

	6b	Explanation for choice of comparators	NA	
Objectives	7	Specific objectives or hypotheses	√	7
Trial design	8	Description of trial design including type of trial (eg, parallel group, crossover, factorial, single group), allocation ratio, and framework (eg, superiority, equivalence, noninferiority, exploratory)	NA	
Methods: Participants, interventions, and outcomes				
Study setting	9	Description of study settings (eg, community clinic, academic hospital) and list of countries where data will be collected. Reference to where list of study sites can be obtained	√	15
Eligibility criteria	10	Inclusion and exclusion criteria for participants. If applicable, eligibility criteria for study centres and individuals who will perform the interventions (eg, surgeons, psychotherapists)	√	16
Interventions	11a	Interventions with sufficient detail to allow replication, including how and when they will be administered	√	11-15
	11b	Criteria for discontinuing or modifying allocated interventions for a given trial participant (eg, drug dose change in response to harms, participant request, or improving/worsening disease)	NA	
	11c	Strategies to improve adherence to intervention protocols, and any procedures for monitoring adherence (eg, drug tablet return, laboratory tests)	NA	
	11d	Relevant concomitant care and interventions that are permitted or prohibited during the trial	NA	
Outcomes	12	Primary, secondary, and other outcomes, including the specific measurement variable (eg, systolic blood pressure), analysis metric (eg, change from baseline, final value, time to event), method of aggregation (eg, median, proportion), and time point for each outcome. Explanation of the clinical relevance of chosen efficacy and harm outcomes is strongly recommended	√	17-21
Participant timeline	13	Time schedule of enrolment, interventions (including any run-ins and washouts), assessments, and visits for participants. A schematic diagram is highly recommended (see Figure)	√	Figure 2

Sample size	14	Estimated number of participants needed to achieve study objectives and how it was determined, including clinical and statistical assumptions supporting any sample size calculations	√	17-21
Recruitment	15	Strategies for achieving adequate participant enrolment to reach target sample size	NA	
Methods: Assignment of interventions (for controlled trials)				
Allocation:				
Sequence generation	16a	Method of generating the allocation sequence (eg, computer-generated random numbers), and list of any factors for stratification. To reduce predictability of a random sequence, details of any planned restriction (eg, blocking) should be provided in a separate document that is unavailable to those who enrol participants or assign interventions	NA	
Allocation concealment mechanism	16b	Mechanism of implementing the allocation sequence (eg, central telephone; sequentially numbered, opaque, sealed envelopes), describing any steps to conceal the sequence until interventions are assigned	NA	
Implementation	16c	Who will generate the allocation sequence, who will enrol participants, and who will assign participants to interventions	NA	
Blinding (masking)	17a	Who will be blinded after assignment to interventions (eg, trial participants, care providers, outcome assessors, data analysts), and how	NA	
	17b	If blinded, circumstances under which unblinding is permissible, and procedure for revealing a participant's allocated intervention during the trial	NA	
Methods: Data collection, management, and analysis				
Data collection methods	18a	Plans for assessment and collection of outcome, baseline, and other trial data, including any related processes to promote data quality (eg, duplicate measurements, training of assessors) and a description of study instruments (eg, questionnaires, laboratory tests) along with their reliability and validity, if known. Reference to where data collection forms can be found, if not in the protocol	√	17-21

	18b	Plans to promote participant retention and complete follow-up, including list of any outcome data to be collected for participants who discontinue or deviate from intervention protocols	NA	
Data management	19	Plans for data entry, coding, security, and storage, including any related processes to promote data quality (eg, double data entry; range checks for data values). Reference to where details of data management procedures can be found, if not in the protocol	√	22-23 & 28
Statistical methods	20a	Statistical methods for analysing primary and secondary outcomes. Reference to where other details of the statistical analysis plan can be found, if not in the protocol	√	22-24
	20b	Methods for any additional analyses (eg, subgroup and adjusted analyses)	√	22-24
	20c	Definition of analysis population relating to protocol non-adherence (eg, as randomised analysis), and any statistical methods to handle missing data (eg, multiple imputation)	NA	
Methods: Monitoring				
Data monitoring	21a	Composition of data monitoring committee (DMC); summary of its role and reporting structure; statement of whether it is independent from the sponsor and competing interests; and reference to where further details about its charter can be found, if not in the protocol. Alternatively, an explanation of why a DMC is not needed	NA	
	21b	Description of any interim analyses and stopping guidelines, including who will have access to these interim results and make the final decision to terminate the trial	NA	
Harms	22	Plans for collecting, assessing, reporting, and managing solicited and spontaneously reported adverse events and other unintended effects of trial interventions or trial conduct	NA	
Auditing	23	Frequency and procedures for auditing trial conduct, if any, and whether the process will be independent from investigators and the sponsor	NA	
Ethics and dissemination				

Research ethics approval	24	Plans for seeking research ethics committee/institutional review board (REC/IRB) approval	√	28
Protocol amendments	25	Plans for communicating important protocol modifications (eg, changes to eligibility criteria, outcomes, analyses) to relevant parties (eg, investigators, REC/IRBs, trial participants, trial registries, journals, regulators)	√	28
Consent or assent	26a	Who will obtain informed consent or assent from potential trial participants or authorised surrogates, and how (see Item 32)	√	28
	26b	Additional consent provisions for collection and use of participant data and biological specimens in ancillary studies, if applicable	NA	
Confidentiality	27	How personal information about potential and enrolled participants will be collected, shared, and maintained in order to protect confidentiality before, during, and after the trial	√	28
Declaration of interests	28	Financial and other competing interests for principal investigators for the overall trial and each study site	√	29
Access to data	29	Statement of who will have access to the final trial dataset, and disclosure of contractual agreements that limit such access for investigators	NA	
Ancillary and post-trial care	30	Provisions, if any, for ancillary and post-trial care, and for compensation to those who suffer harm from trial participation	NA	
Dissemination policy	31a	Plans for investigators and sponsor to communicate trial results to participants, healthcare professionals, the public, and other relevant groups (eg, via publication, reporting in results databases, or other data sharing arrangements), including any publication restrictions	NA	
	31b	Authorship eligibility guidelines and any intended use of professional writers	NA	
	31c	Plans, if any, for granting public access to the full protocol, participant-level dataset, and statistical code	NA	
Appendices				

Informed consent materials	32	Model consent form and other related documentation given to participants and authorised surrogates	√	Supl materials
Biological specimens	33	Plans for collection, laboratory evaluation, and storage of biological specimens for genetic or molecular analysis in the current trial and for future use in ancillary studies, if applicable	NA	

*It is strongly recommended that this checklist be read in conjunction with the SPIRIT 2013 Explanation & Elaboration for important clarification on the items. Amendments to the protocol should be tracked and dated. The SPIRIT checklist is copyrighted by the SPIRIT Group under the Creative Commons "Attribution-NonCommercial-NoDerivs 3.0 Unported" license.

BMJ Open

Realist Evaluation of the impact, viability and transferability of an alcohol harm reduction support program based on mental health recovery : The Vitae Study protocol

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2022-065361.R1
Article Type:	Protocol
Date Submitted by the Author:	16-Jul-2022
Complete List of Authors:	Martin-Fernandez, Judith; ISPED; ISPED STEVENS, Nolwenn; university bordeaux Moriceau, Sarah; Université de Bordeaux Serre, Fuschia; Université de Bordeaux Blanc, Hélène; Santé! Organization Latourte, Emmanuelle; Santé! Organization Auriacombe, Marc; Sanpsy, cnrs USR 3413, Addiction Team; SANPSY, CNRS USR 3413, Addiction Team Cambon, Linda; ISPED; CHU
Primary Subject Heading:	Global health
Secondary Subject Heading:	Global health, Health policy, Health services research, Mental health, Addiction
Keywords:	PUBLIC HEALTH, MENTAL HEALTH, Substance misuse < PSYCHIATRY

Realist Evaluation of the impact, viability and transferability of an alcohol harm reduction support program based on mental health recovery : The Vitae Study protocol

Judith Martin-Fernandez*[,1,2], Nolwenn Stevens*[,1,2], Sarah Moriceau [2,4,5], Fuschia Serre[2,4,5], Hélène Blanc[6], Emmanuelle Latourte[6], Marc Auriacombe[2,4,5], Linda Cambon [1,2,3,7]

[1] MéRISP Team, INSERM Bordeaux Population Health Research Center, UMR 1219, CIC1401-EC, University of Bordeaux, ISPED, 33000, Bordeaux, France.
[2] University of Bordeaux, ISPED, F-33000 Bordeaux, France
[3] CHU, Bordeaux, France
[4] Addiction Team Phenomenology and Determinants of Appetitive Behaviors, Sanpsy CNRS USR 3413, Bordeaux, France
[5] Pôle Addictologie et Filière Régionale, CH Charles Perrens and CHU de Bordeaux, Bordeaux, France.
[6] Santé! Organization, Marseille, France
[7] Chaire de prévention ISPED/SPF, Université de Bordeaux, Bordeaux, France

*: First co-authors

Corresponding author: Judith Martin-Fernandez
Mob.+33664701772 / judith.martin-fernandez@u-bordeaux.fr

Abstract

Introduction:

Addiction is considered a chronic disease associated with a high rate of relapse as a consequence of the addictive condition. Most of the current therapeutic work focuses on the notion of relapse prevention or avoidance and the control of its determinants. Since only a small portion of patients can access alcohol addiction treatment, it is crucial to find a way to offer new support towards safe consumptions, reductions or cessations. The Harm Reduction approach and mental health recovery perspective offers another way to support the patient with alcohol addiction. Vitae is a realist evaluation of the impact, viability and transferability of the IACA! Program, a Harm

Reduction program based on the principle of psychosocial recovery for people with Alcohol Use Disorders.

Methods and analysis:

The Vitae study adheres to the theory-driven evaluation framework where the realist evaluation method and contribution analysis are used to explore the effects, mechanisms, and influence of context on the outcomes and to develop and adjust an intervention theory. This study is a 12-month, multi-case, longitudinal descriptive pilot study using mixed methods. It is multi-centered, and carried out in 10 addiction treatment or prevention centers. In this study, outcomes are related to the evolution of alcohol use and the beneficiaries trajectory in terms of psychosocial recovery during these 12 months after the start of IACA!. The target number of participants are 100 beneficiaries and 23 professionals.

Ethics and dissemination:

This research was approved by the Committee for the Protection of Persons Ouest V n°: 21/008-3HPS and was reported to the French National Agency for the Safety of Health Products. This research is registered on ClinicalTrials.gov (No.NCT04927455) and in the European database (No.ID-RCB2020-A03371-38). All participants will provide consent prior to participation. The results will be reported in international peer-reviewed journals and presented at scientific and public conferences.

‘Strengths and limitations of this study

- Consistent with bottom-up approaches, our study is a realist evaluation based on a natural experiment.
- Mobilizing mixed-models methods this study will evaluate the impact, viability and transferability of a complex Harm Reduction intervention (IACA!)
- This study will mobilize multiple modes of data collection: interviews with 4 samples, observations and questionnaires.
- We anticipate a potential risk of attrition during the study due to structural and circumstantial situations
- The Vitae study will not use any kind of biological or medical information and will rely on declarative data.

Introduction

SCIENTIFIC CONTEXT AND ISSUES

In 2016, an estimated 80,000 people died of alcohol-attributable cancer, and about 1.9 million years of life were lost due to premature mortality or disability in the EU (1). Alcohol use is a well-known risk factor of disease and injury (2, 3). A large contribution to this burden is Alcohol Use Disorders (AUDs)[i] and Alcohol Dependence (AD) (4). In France, in 2015, more than 27,000 and almost 8% of all new cancer cases were estimated to be attributable to alcohol, whereas they were estimated to be 5.8% worldwide in 2012 (5) . Heavy drinking was responsible for 4.4% of all new cancer cases (6) and was the second leading cause of so-called preventable cancers (7). A recent review also showed that, worldwide, alcohol use can explain up to 27% of the socioeconomic inequalities in mortality (8).

Subjects with alcohol addiction (or alcohol use disorders) are known to experience a range of social harms because of their own excess drinking, including family disruption, employment problems, criminal convictions, and financial problems (9). Assessments of these problems are scarcer, but social-cost studies give some hints of the alcohol-attributable consequences in selected countries (10, 11).

Addiction is considered a chronic disease (12, 13) associated with a high rate of relapse as a consequence of the addictive condition. In this perspective, treatment, whatever the addiction, aims to obtain and maintain abstinence, or at least a significant reduction

[i] Defined as alcohol dependence and harmful use of alcohol (see International Classification of Disease tenth revision (ICD-10))

in use or a controlled consumption, by avoiding situations presenting the risk of relapse and through the management of craving. Most of the current therapeutic work focuses on the notion of relapse prevention or avoidance and the control of its determinants (13-15) .

Since only a small portion of patients can access alcohol addiction treatment, it is of paramount importance to find a way to offer new support towards safe consumptions, reductions or cessations. The Harm Reduction (HR) approach and mental health recovery perspective offers another way to support the patient with alcohol addiction. HR refers to interventions that aim to reduce the adverse health and socio-economic consequences of substance use without focusing on abstinence, reduced use or addiction management (16). The HR approach is based on:

- Suspension of the moral judgment on uses;
- The implementation of a proximity approach, based on reaching people who use alcohol "where they are" (going to them or through outreach, implemented through mobile teams, street work or even intervention in a festive environment) and, on the other hand, on the unconditional reception of people "where they are" with their current consumption (i.e., without any requirement for a commitment to stop drug use or to a care or integration approach);
- The participation, from a community health perspective, of people who use drugs in the development and implementation of interventions and the recognition of their knowledge of the experience (knowledge of products and their effects, use practices, consumption scenes, lifestyles and peer group codes, ability to define and relay low-risk practices)

In some respects, this concept is very similar to that of mental health recovery (17), which articulates cure and care, autonomy and dependence, vulnerability and capacity. It is a non-medical process of getting better, clinically, socially and functionally. It aims at seeking and supporting the person's resources to build solutions. This process focuses on the positive transformations that the person experiences when recovering and the environmental factors that facilitate or hinder them (18).

Even though this is not their primary objective, HR and mental health recovery are likely to influence the severity of addiction and relapse.

Since 2013 the organization Santé! (Marseille, PACA region, France) has developed a risk and harm reduction program (IACA!) based on the principle of psychosocial recovery used in the "Housing First" program (19) for people with AUD. This program aims to reintegrate the person with problem alcohol use into a path of care, by removing the psychological contributors to medical and social isolation (shame, guilt, feeling of failure), stabilizing alcohol use (sometimes including access to alcohol) and providing security and support for psychosocial recovery. The IACA! intervention has already shown its effects on alcohol consumption in the center where it was implemented and is now being extended to new sites. In order to assess the conditions under which such an intervention is deployed in other centers and how its initial effect is generalizable, we developed the Vitae study. This pilot study is a realist evaluation of the impact, viability and transferability of the IACA! program. This pilot study will be used to collect data prior to implementation of a fully controlled effectiveness trial.

Methods

This protocol is consistent with the SPIRIT 2013 Statement : Defining standard protocol items for clinical trials.

AIM, DESIGN AND SETTING OF THE STUDY

Aim of the study

The IACA! intervention proposes intervention likely to secure factors that are predictive of relapse (feelings of dissatisfaction, anxiety, stress management, family and social support, etc.), thus facilitating spontaneous cessation while promoting the well-being of individuals. The IACA! intervention has already shown its effects on alcohol consumption in the center where it was tested. The question now is to confirm the results observed over the last two years and to explain them in a perspective of scaling up. As the IACA! intervention was only tested in one center, operating on an associative model and not on a care model, the question arises as to its transferability. For this reason, we decided to conduct a pilot study (20) prior to an effectiveness trial.

The aims of the present study are:

- to evaluate the transferability of IACA! to various centers that take care of people that have problems related to excessive alcohol use (addictions treatment centers and/ or psychosocial support centers (10 different treatment centers in the Nouvelle-Aquitaine and PACA regions, see Supplementary table 1) in terms of results.
- To assess the conditions of transferability, included viability, of IACA! in these 10 centers

- To evaluate the feasibility of a multi-centered controlled efficacy trial

Theoretical framework

Transferability is the extent to which the measured effectiveness of an applicable intervention could be achieved in another setting (21). It depends on multiple factors such as population and stakeholders' characteristics, contextual factors, modalities of intervention deliverance and the modalities and conditions of implementation (22). When studying transferability, an analysis of viable validity is also essential (23). As defined by Chen, viability evaluation "assesses the extent to which an intervention program is viable in the real world. More specifically, it evaluates whether the intervention:

- Can recruit and/or retain ordinary clients,
- Can be adequately implemented by ordinary implementers
- Is suitable for ordinary implementing organizations to coordinate intervention-related activities,
- Is affordable,
- Is evaluable, and
- Enables ordinary clients and other stakeholders to view and experience how well it solves the problem."(23)

The Vitae study adheres to the theory-driven evaluation framework (24-27) where the realist evaluation method and contribution analysis (28, 29) are used to explore the effects, mechanisms, and influence of context on the outcomes and to develop and adjust an intervention theory. This case-study method will help to set out the contribution "story": in light of the multiple factors influencing the result, does the

intervention contribute to an observed result and in what way?(28).This method is intended to provide "an in-depth view of how things work”(24).

In realist evaluation, developed by Pawson and Tilley (30), the effectiveness of the intervention depends on the underlying mechanisms at play within a given context. The realist evaluation is about identifying context-mechanism-outcome configurations (CMOs). The aim is to understand how and under what circumstances an intervention works. A middle-range theory (i.e., a theory that is aimed at describing the interactions between outcomes, mechanisms, and contexts) is set out to highlight the mutual influences of intervention and context (31, 32).

Hence, the evaluation is about identifying middle-range theories. Hypothesized and validated by empirical investigations, these CMO configurations help to understand how an intervention brings about change, bearing in mind context and target group (31, 32). The recurrence of CMOs is observed in successive case studies or in mixed protocols, such as realist trials (32). Indeed, to consider context, realist evaluators observe in successive cases what Lawson (quoted by Pawson in 2006 (33)) calls demi-regularities of CMOs (i.e., regular although not necessarily permanent occurrences of an outcome when an intervention triggers one or more mechanisms in a given context) (32). Studying these recurrences in different contexts allows the isolation of key elements that are replicable in a family of contexts. This gives rise to middle-range theories that become stronger as progress is made through the cases. “These middle-range theories, in certain conditions, predict possible intervention outcomes in contexts different from the one in which the intervention was tested” (32).

Applied to our case

As the realist principle is suitable for studying non-linear interactions in complex systems, we adopted this approach. The intervention under investigation applies to an operational program and it is therefore important to identify its key functions (34, 35), i.e., its interventional or contextual components underpinning its effectiveness.

Where usually viability and transferability are studied with scales that list attributes and criteria in order to rate or to ease the transferability of an intervention (21, 36, 37), we chose to mobilize the realist evaluation. Indeed, studying transferability and viability through the theory-driven lens will generate a dynamic and precise analysis of the IACA! intervention because "theory-based evaluation is demonstrating its capacity to help readers understand how and why a programme works or fails to work. Knowing only outcomes, even if we know them with irreproachable validity, does not tell us enough to inform programme improvement or policy revision. Evaluation needs to get inside the black box and to do so systematically"(26).

In this study, each institution deploying the IACA! program, with its own context, will constitute a case. For each case, the intervention will be studied to identify the mechanisms at play in the given context along with the variation in outcomes. CMO configurations will be identified through an analysis of each case. A cross-case analysis will highlight recurrent CMO configurations and thus identify key features for possible replication.

In our study, outcomes are related to the evolution of alcohol use at 12 months after the start of IACA! and the beneficiaries' trajectory during these 12 months in terms of psychosocial recovery.

Drawing on the literature and on the experience of professionals delivering the intervention, we will first set out initial middle-range theories (30, 33), which we will test in each case (i.e., centers) by collecting qualitative and quantitative data (32).

The mechanisms will be identified qualitatively according to the definition of Ridde et al.: "a mechanism is an element of reasoning and reaction of an agent with regard to an intervention productive of an outcome in a given context" (38, 39). It " characterizes and punctuates the process of change and hence, the production of outcomes" (40).

Contextual elements will be included among all the elements collected qualitatively that satisfy the following definition: elements located in time and space that may affect the intervention and the outcomes produced, and whether they relate to the centers, the professionals, the beneficiaries, or the operational setting. In a realist approach, interventional elements are part of the context. Therefore, we can distinguish between Ci (for Contextual factors linked to the Intervention) and Ce (for Contextual factors not linked to the intervention, i.e., external factors).

THE IACA! INTERVENTION AND ITS IMPLEMENTATION

The IACA! Intervention

Created in 2013 in Marseille by an addictology professional and a social support professional, the association Santé! in the PACA region is developing a risk and harm

reduction approach for people who consume alcohol, based, among other things, on the principle of psychosocial recovery as used in the " Housing First" program (19).

The intervention, called IACA!, aims to reintegrate the person into a healthcare pathway by removing the barriers that cause medical and social isolation (shame, guilt, feelings of failure), stabilizing the person's use and ensuring their safety, and supporting their psychosocial recovery. As shown in Figure 1 and depending on the person's needs, the intervention aims to:

1/ Provide advice, reassurance, listening, appeasement

2/ Secure and/or reorganize consumption in order to avoid periods of withdrawal syndrome (vulnerability factors)

3/ Activate rights to maintain/obtain appropriate and satisfactory social integration

4/ Provide psychological support

5/ Adapt, build and coordinate a health path (to avoid break-up or non-recourse)

6/ Promote social links,

7/ Consolidate long-term alcohol consumption strategies and

8/ IF REQUESTED: Accompaniment for a cessation experiment.

Figure 1 : Management process implemented by Santé !

This support is organized in 4 sequences:

1st phase - **Reception/ Build the alliance**: unburden people in relation to their issues (lifting shame): valuing their strategies without judging their consumption; Inform and define the IACA! support in a break with traditional support

2nd phase – **Securing:** with the person, identify the situations that reinforce consumption and act on them: Securing consumption to avoid risk situations (stress, periods of lack, dehydration, etc.); Avoiding peaks in consumption; Ensuring basic needs such as food, hydration, safety, sleep, etc.

3rd phase (in parallel with or following phase 2) – **Stabilization**: support a project and reconstruction objectives over several months; Stabilize consumption; Re-engage the person in a care pathway adapted to his needs and projects; Tackle social, family and professional isolation, and secure the environment by identifying a set of professionals needed to solve the main difficulties identified.

4th phase - **Progressive reduction of support**: monitoring with regard to sustainability and autonomy; Checking that the support is satisfactory

The initial results of this program over one year were promising since, of the 17 people who received the intervention, all had a social or health benefit, and 13 of these benefits were associated with stabilization (n=4), reduction (n=7) or cessation (n=2) of alcohol use after one year. Thus, in addition to the positive results in terms of psychosocial recovery, and even if the goal is not the cessation of alcohol consumption, the program is potentially promising since it sometimes leads to the cessation of consumption and secures/reduces consumption for half of the people (back to occasional consumption). The program therefore initially provides what is

recommended in any attempt to quit, which could explain this spontaneous reduction or cessation.

Implementation in 10 new centers:

The 10 centers will be supported by Santé! in the implementation of IACA! according to the following procedures:

- Training of 10 pairs of professionals (2/center) in charge of accompanying beneficiaries in the centers
- Anchoring an alcohol RH support practice: Support for the implementation and adaptation of the IACA! method within each center
- Adaptation and improvement: changes to the IACA! method and its tools

STUDY DESIGN

This study is a 12-month, multi-case, longitudinal descriptive pilot study using mixed methods (quantitative and qualitative). It is multi-centered and national, and carried out in 10 addiction treatment or prevention centers (4 in the PACA region and 6 in the Nouvelle-Aquitaine region). These sites, all in the health and social sector, are heterogeneous (see Supplementary Table 1) in their aims, organization and target populations. Among the 10 centers there are 5 CSAPAs (addiction treatment, support and prevention center providing information, medical, psychological and social evaluations of requests and needs, and orientation), 1 CAARUDs (Reception and Accompaniment Centers for Harm Reduction for Drug Users), 4 CHRS (accommodation and social rehabilitation centers) and 1 IML (inter-mediation rental program).The CSAPAs have a target population which is less vulnerable than that of the other centers.

Indeed, most of the CSAPAS receive users who, although they may be followed up by care, whether specialized in addictology or not, generally have more problematic and less "controlled" uses than the general population. They also often live in more precarious social situations.

CHARACTERISTICS OF PARTICIPANTS

To validate the implementation of IACA! and highlight the conditions of transferability of this program, we will collect data from three types of population:

- Individuals receiving support from the IACA! Intervention (called beneficiaries),
- Professionals implementing the IACA! Intervention, i.e., the pairs in charge of accompanying the beneficiaries in the centers as well as the persons in charge of these centers,
- Professionals from Santé! supporting the deployment of the IACA! intervention.

The beneficiaries are all persons integrating the program in the project's partner sites and who consume alcohol.

The professionals will be specialized educators, social workers, nurses, social and solidarity economy advisors, etc.

The inclusion criteria will be as follows:

- For the beneficiaries: Being over 18 years old, willing to participate, having started the IACA! Program 15 days beforehand or less, and being followed up by one of the 10 centers in the study. Beneficiaries will be excluded if they have a severe somatic or psychiatric pathology that is incompatible with a good understanding of the assessment tools; if they have difficulty understanding

and/or writing French; if they are unreachable by telephone; if they are participating in another research project with an ongoing exclusion period; if they are placed under court protection; and if they are pregnant.

- For professionals from centers implementing IACA!**:** Having been trained at IACA!, willing to participate, and working in the centers participating in the implementation of IACA!
- For the professionals in charge of the centers: having participated in the implementation of the IACA! method in their centers, and willing to participate
- For the SANTé! professionals

  Participating or having recently participated in the implementation of IACA!

DATA COLLECTION

In order to collect information from multiple complementary sources we will use quantitative and a qualitative data collection methodologies:

Quantitative Data:

The aim is to collect longitudinal data concerning the effects of IACA!. The effects of IACA! involve quality of life, mental health recovery and alcohol consumption.

All participants who meet the eligibility criteria will be offered participation in the study. The centers' professionals will inform patients being treated with IACA! of the existence of the VITAE study and the possibility of participating in it. A meeting will then be organized between the patients and the research team, in order to offer them the opportunity to participate in this research and to inform them of:

- The purpose of the study,

- The computerized processing of data on the participant that will be collected in the course of this research, and his/her rights of access to, opposition to and rectification of this data.

The Baseline M0 will then be schedule (maximum 15 days after starting the IACA! Program)

Supplementary Table 2 shows the different data that will be collected on 100 patients (10 per center), prospectively, by trained clinical research staff. During the baseline inclusion (M0), participants will be interviewed using:

- The Addiction Severity Index (ASI),
- The Treatment Service Review (TSR),
- The Mini International Neuropsychiatric Interview (MINI),
- The Empowerment Scale

At each follow-up, participants will be assessed with a follow-up ASI, TSR interview, craving assessment and empowerment scale.

The Addiction Severity Index is a semi-structured interview designed to assess impairments that commonly occur due to substance-related disorders (41). A modified and validated 45-minute French version of the ASI will be used to take into account tobacco and addictive behaviors (42). The ASI explores six areas that may be affected by addiction: medical status, employment/support status, substance and behavioral addiction, family and social relationships, legal status, and psychological status. These data are used to generate Composites Scores (CSs) for each domain, thereby reflecting the severity of the subject's condition. CSs range from 0 to 1, with a worsening severity as the scores move closer to one. (43-45).

ASI will be used at inclusion and then every 3 months during the 12-month intervention period.

Mini International Neuropsychiatric Interview (MINI):

The Mini International Neuropsychiatric Interview is a structured diagnostic interview providing a standardized assessment of 18 major psychiatric disorders defined according to Axis I DSM-IV (anxiety disorders, mood disorders, psychotic disorders, addictive disorders, eating disorders) and the diagnosis of antisocial personality disorder (46, 47). A 30-minute version of MINI adapted for DSM-5 criteria will be used.

Craving Evaluation Scale:

The craving evaluation scale developed by the University of Bordeaux Addiction Team in the SANPSY Laboratory will be used. It is a 5-minute hetero-evaluation of craving for all substances and addictive behaviors manifested now or in the past. This tool explores the frequency of craving, corresponding to the number of days craving was reported over the last 30 days, as well as the mean and maximum intensity on a scale ranging from 0 (no craving) to 10 (extreme craving).

Treatment Service Review (TSR):

The Treatment Service Review, 6th version, is an inventory of the medical, psychosocial and psycho-educational contacts of the subject over the last 30 days (48, 49). This instrument allows a quantitative evaluation of the effective medico-psycho-social management of a subject. It was validated in French, and is now integrated into the ASI evaluation as it was developed by the same group that developed the ASI.

Empowerment scale:

The Empowerment Scale measures personal empowerment by examining the concepts of hope, social acceptance and quality of life (50, 51). It is a 28-item scale with 4 points each, ranging from "Strongly Disagree" to "Strongly Agree". The total empowerment score is a quantitative variable, ranging from 28 to 112. This scale can be divided into sub-dimensions measuring self-efficacy and self-esteem, power and powerlessness, community activism and autonomy, optimism and control over the future, and righteous anger.

Supplementary Table 2 shows the different data that will be collected.

Qualitative Data

Supplementary Table 3 shows the different data that will be collected. We will identify: skills field, functioning principles, contextual conditions of success, delivering conditions of success, mechanisms, and contextual elements (including techniques). The data collected will help to elaborate the principles of initial middle-range theories (to establish how the intervention works in context), and mechanisms hypothesized as key functions of IACA!. We will monitor these different data in each center implementing IACA! to verify their integrity in target centers and to verify the initial theories (contribution analysis).

To perform this collection, we will cross two qualitative investigation methods: non-structured interviews and observations:

Non –directive interviews with the centers' professionals (20 interviews)

This investigation will be performed in all centers implementing IACA. We will conduct this investigation almost 9 months after the beginning of implementation. A total of 20

interviews will therefore take place over the study period. From these professionals, the data collection will be focused on the data described in Supplementary table 3.

Non –directive interviews with the SANTé! professionals

Interviews with santé! professionals supporting the implementation of IACA! in the 10 investigated centers (3 interviews). We will carry out this investigation almost 6 months after the beginning of implementation. From these professionals, the data collection will be focused on the data described in Supplementary table 1.

Observations (10 observations)

In addition to interviews with professionals, one observation per center will be conducted, making a total of 10 observations. The objective is to collect the following physical contextual elements, specific to each center, presented as being potentially key. These observations will be based on an observation grid. These investigations will be performed after 6 months of implementation.

Non- directive interviews with beneficiaries (100 interviews)

We will perform this qualitative investigation on the beneficiaries included in the IACA! Program (10 per center). A total of 100 interviews will be conducted. This qualitative investigation will be performed between 9 and 12 months after beginning the IACA program. The data collected will be focused on the data described in Supplementary table 3 (i.e., mechanisms, contextual conditions of success, delivering conditions of success).

To avoid social desirability bias, we will conduct unstructured surveys. Thus, open-ended questions will be asked to the professionals and beneficiaries. The interview grids and observation log will be designed and pre-tested during exploratory interviews and observation sessions at the beginning of the study.

PATIENT AND PUBLIC INVOLVEMENT

The Vitae study does not include any patient or public involvement in terms of setting research priorities, defining research questions or outcomes, providing input into the study design, or disseminating the results. The research participants are called upon to answer questionnaires or interviews.

DATA ANALYSIS

Quantitative data

Quantitative evaluations repeated every 3 months will serve to identify the impact of this intervention on the main judgment criterion (i.e., the evolution of the severity of alcohol use at 12 months after the start of IACA) and to describe the subjects and their evolution over 12 months.

A descriptive analysis will be performed to describe the severity of the subjects' alcohol use after 12 months of intervention. This evolution of the severity of alcohol use corresponds to the delta of composite scores between M12 and M0. The variables alcohol consumption, alcohol craving and severity of addiction will be described over the 12 months of the intervention in relation to the initial assessment. They will also be compared between centers.

Qualitative variables will be described according to their frequency and percentage. Quantitative variables will be described according to their means and standard deviations.

Secondly, to determine the factors impacted by the intervention, we will perform repeated analyses of variance to determine whether the variables have changed during the intervention. For the variables showing a change, we will use a comparison test on repeated measures controlling for sociodemographic variables: age, gender, work in the last 3 years, presence or absence of current mood and anxiety disorders, and the center in which the intervention was carried out (applying the Bonferroni correction). All statistical analyses will be performed with the JMP software (version Pro 15.2.0, SAS Institute Inc., North Carolina).

Qualitative data

A content analysis by case and inter-case (centers) will be conducted. Content analysis encodes, classifies and ranks the communication in order to examine its patterns, trends or distinguishing features, in our case the recurrence of C-M configurations. The N'vivo® software will be used for this, allowing us to conduct a thematic analysis of the 3 data sources.

The analysis performed by center, by validating or allowing CMO adjustments, will have to answer 4 questions:

Question 1 - In what contextual and delivery conditions does IACA! seem to produce an impact on patients? By impact we mean the targeted goals presented within the intervention section.

Question 2 – To what extent is IACA! feasible and acceptable in the routines of professionals in the different centers?

Question 3 – What elements considered as key are actually adaptable (and therefore are non-key)?

Question 4 – What elements are mandatory to help to implement IACA!? What elements should be included in a transfer scheme?

The answers to these questions will allow us to highlight the hypothetical key functions (CMO configurations) defined with Santé! for each center by identifying i) the degree of integrity of the key functions in each center, and ii) the degree of adaptation in each center. We will perform monographies, providing a specific description of all key functions in each center. The timeline (Figure 2) presents the key steps of the Vitae study.

QUAN/QUAL analysis

We will then conduct a QUAN/QUAL (52) analysis in each center in order to compare: the results observed on patients in terms of psychosocial recovery and consumption (collected by quantitative questionnaire) and the implementation or completeness of the IACA! intervention, the contextual conditions, the principles of operation and support, and the professional skills needed in the transfer scheme.

ETHICS AND DISSEMINATION

Ethics approval and consent to participate

The Vitae project will be carried out with full respect of current relevant legislation (e.g. the Charter of Fundamental Rights of the EU) and international conventions (e.g.

Helsinki Declaration). It follows the relevant French legislation on interventional research protocols involving the human person (Jardé law, category 3 research on prospective data (53)).

The protocol (version 1.2) was approved on Mach 2021 by the Comité et Protection des Personnes (CPP) i.e. Committee for the Protection of Persons Ouest V n°: 21/008-3HPS and was reported to the Agence Française de Sécurité Sanitaire des Produits de Santé (ANSM) i.e. the French National Agency for the Safety of Health Products. This research has been registered on ClinicalTrials.gov (No. NCT04927455). The research project is registered in the European database (No. ID-RCB 2020-A03371-38).

All participants who meet the eligibility criteria will be offered participation in the study. Professionals at the centers will inform patients being treated with IACA! of the existence of the VITAE study and the possibility of participating in it. A meeting will then be organized between the patients and the SANPSY research team, in order to offer them to participate in this research and to inform them of :

- The purpose of the study,
- The computerized processing of data concerning the participant that will be collected during the course of this research and his/her rights of access, opposition and rectification to this data.

For patients under a protective measure (i.e.: curatorship, tutorship, ...), the legal representative will also be informed by the Vitae team:

- Of the purpose of the study,

- Of the computerized processing of data concerning the participant that will be collected during this research and his/her rights of access, opposition and rectification to this data.

If the person agrees to participate, he or she gives oral consent (as it is specified by the Jardé law and accepted by the ethics committee (53)) and his or her non-opposition is documented in the participant's medical record or file. The participant may, at any time, object to the use of his or her data in the context of the research. These information will also be given to the legal representative if the patients are under guardianship.

Dissemination plan

The results will be disseminated in various academic and non-academic platforms. The results will be reported in international peer-reviewed journals and presented at international and national conferences. A public report will describe all the steps of the study, the results and recommendations. Eventually, a general restitution will be held in order present the final result of the study to all the participants and funders.

DISCUSSION

Despite a high prevalence of addiction in the general population, the worldwide proportion of individuals with addictions who access addiction treatment is estimated to be less than 25% overall, and under 10% for alcohol and tobacco, including in France (54, 55). A recent meta-analysis identified an average dropout rate of 30% for psychosocial substance use disorder treatment and a 26% dropout rate for programs

targeting alcohol (56). The low rate of access to alcohol addiction treatment and the high level of drop-out after relapse could be explained by barriers such as the stigma associated with addiction or the desire to try to cope alone. In addition, many patients do not have access to treatment, or drop out from treatment due to the pre-requisite of a period of inpatient detoxification (54, 57, 58). This study will contribute to scaling up a potentially effective intervention for the management of tens of thousands of patients currently in a therapeutic impasse.

Our study will face some challenges and limitations, since it will start during the COVID 19 crisis which is impacting the follow-up and involvement of the people with AUD and the professionals. Therefore, we anticipate a significant risk of attrition during the study due to the turnover of staff and the discontinued monitoring of the beneficiaries while the intervention is being dispensed.

Secondly, all our results are declarative and the Vitae study will not use any kind of biological or medical information. Although declarative data could lead to underestimation, the use of a hetero-administered questionnaire on substance consumption should reduce this under-declaration (59).

From a public health point of view, this study will explain and pinpoint the precise impact of IACA and identify the conditions for this impact. It will allow us to define the key functions and how they work in different contexts or how they could be adapted, and eventually to define a guideline to disseminate IACA! to other centers and adapt it.

From a research viewpoint, our proposed methodology is consistent with the bottom-up approaches advocated in health promotion, starting with a real-world response to

a pressing problem (23). Transferability and viability studies are still underused in France, even though their pertinence has been highlighted in the international literature. Here, we propose an application of these international recommendations relative to the transferability and evaluation of complex health interventions. Mobilizing the realist evaluation to analyze the transferability and the viability of an intervention is quite innovative, and will produce thorough and precise knowledge on this program. This pilot study will evaluate the feasibility and the pertinence of a multi-centered controlled efficacy trial. It will use the feedback from the teams conducting the evaluation and the interviews with center managers or directors. These elements will allow us to establish: the size of the sample needed to conduct a trial; the integrity and relevance of the evaluation protocol and of the data collection tools used in this trial; and the randomization, recruitment and consent procedures.

Transferability of complex health interventions is a major public health topic and remains a highly valuable research field. This study, focusing on an innovative intervention for people with AUD implemented in very different contexts will provide valuable information for the implementation science but also for the HR field. The results of this study will contribute to informing public decision-making in terms of support for people with AUD. In addition, it will contribute to the preparation of a large-scale trial and, ultimately, to the scaling up of an effective intervention for the management of people with psychosocial problems related to excessive alcohol use.

Authors' contributions

JMF and NS drafted this article and all authors revised the manuscript. The project design was developed by LC and MA. JMF, NS, SM, FS were involved in implementing the project and in developing the evaluation design, under the supervision of LC and MA. HB and EL were in charge of the design and the implementation of the IACA! Intervention. All authors read and approved the final manuscript.

Competing interests statement

The authors declare that they have no competing interests.

Funding statement

This research has received funding from two national recognized research agency; the INCa and the IRESP. These funding has been obtained via two national competitive peer reviewed grant application processes, respectively named "2019 Call for projects- Population health intervention research: Addressing all dimensions of cancer control" (No. CAMBON-2020-004) and "2019 Call for projects: Tackle the addictions to psychoactive substances" (N°CAMBON IRESP-19-ADDICTIONS-05) .

List of abbreviations

AD: Alcohol Dependence

ANSM: "Agence Française de Sécurité Sanitaire des Produits de Santé"; the French National Agency for the Safety of Health Products

ASI : The Addiction Severity Index

AUD: Alcohol Use Disorders

CAARUD : Reception and Accompaniment Centers for Harm Reduction for Drug Users

CHRS : accommodation and social rehabilitation centers

CMO: context-mechanism-outcome

CPP: "Comité de Protection des Personnes"; Committee for the Protection of Person

CSAPA: addiction treatment, support and prevention center providing information, medical, psychological and social evaluations of requests and needs, and orientation

HR: Harm Reduction

IML: inter-mediation rental program

MINI: The Mini International Neuropsychiatric Interview

TSR : Treatment Service Review

Vitae: Pilot Study to Evaluate Impact and Transferability of an Alcohol Focused Harm Reduction Support System Based on Mental Health Recovery Named IACA!

Word count : 5068

Figure 2 : Management process implemented by Santé !

Figure 2 : Timeline of the Vitae Project

References

1. Rehm J, Shield KD. Alcohol Use and Cancer in the European Union. European Addiction Research. 2021;27(1):1-8.
2. Organization WH. Global status report on alcohol and health 2018: World Health Organization; 2019 2019.
3. Stanaway JD, Afshin A, Gakidou E, Lim SS, Abate D, Abate KH, et al. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 2018;392(10159):1923-94.
4. Rehm J, Shield KD, Gmel G, Rehm MX, Frick U. Modeling the impact of alcohol dependence on mortality burden and the effect of available treatment interventions in the European Union. European Neuropsychopharmacology. 2013;23(2):89-97.
5. Praud D, Rota M, Rehm J, Shield K, Zatoński W, Hashibe M, et al. Cancer incidence and mortality attributable to alcohol consumption. International Journal of Cancer. 2016;138(6):1380-7.
6. Shield KD, Marant Micallef C, Hill C, Touvier M, Arwidson P, Bonaldi C, et al. New cancer cases in France in 2015 attributable to different levels of alcohol consumption. Addiction. 2018;113(2):247-56.
7. Soerjomataram I, Shield K, Marant-Micallef C, Vignat J, Hill C, Rogel A, et al. Cancers related to lifestyle and environmental factors in France in 2015. European Journal of Cancer. 2018;105:103-13.
8. Probst C, Kilian C, Sanchez S, Lange S, Rehm J. The role of alcohol use and drinking patterns in socioeconomic inequalities in mortality: a systematic review. The Lancet Public Health. 2020;5(6):e324-e32.
9. Casswell S, Thamarangsi T. Reducing harm from alcohol: call to action. The Lancet. 2009;373(9682):2247-57.
10. Rehm J. The Risks Associated With Alcohol Use and Alcoholism. Alcohol Res Health. 2011;34(2):135-43.
11. Rehm J, Mathers C, Popova S, Thavorncharoensap M, Teerawattananon Y, Patra J. Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. The Lancet. 2009;373(9682):2223-33.
12. McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA. 2000;284(13):1689-95.

13. Auriacombe M, Serre F, Denis C, Fatséas M. Diagnosis of addictions. The routledge handbook of the philosophy and science of addiction: Routledge; 2018. p. 132-44.
14. Fatseas M, Auriacombe M. Principes de la thérapeutique et des prises en charge en addictologie. Abrégé d'addictologie. Masson ed. Paris: Lejoyeux M ed; 2009. p. 62-8.
15. Principles of drug addiction treatment: A research-based guide (Third Edition). National Institute on Drug Abuse; 2018. Report No.: 1437926762.
16. Lenton S, Single E. The definition of harm reduction. Drug Alcohol Rev. 1998;17(2):213-9.
17. Ellison ML, Belanger LK, Niles BL, Evans LC, Bauer MS. Explication and Definition of Mental Health Recovery: A Systematic Review. Administration and Policy in Mental Health and Mental Health Services Research. 2018;45(1):91-102.
18. Davidson L, Roe D. Recovery from versus recovery in serious mental illness: One strategy for lessening confusion plaguing recovery. Journal of Mental Health. 2007;16(4):459-70.
19. Watson DP, Shuman V, Kowalsky J, Golembiewski E, Brown M. Housing First and harm reduction: a rapid review and document analysis of the US and Canadian open-access literature. Harm Reduction Journal. 2017;14(1).
20. Thabane L, Cambon L, Potvin L, Pommier J, Kivits J, Minary L, et al. Population health intervention research: what is the place for pilot studies? Trials. 2019;20(1):309.
21. Wang S, Moss JR, Hiller JE. Applicability and transferability of interventions in evidence-based public health. Health Promot Int. 2006;21(1):76-83.
22. Cambon L, Minary L, Ridde V, Alla F. Transferability of interventions in health education: a review. BMC Public Health. 2012;12:497.
23. Chen HT. The bottom-up approach to integrative validity: a new perspective for program evaluation. Eval Program Plann. 2010;33(3):205-14.
24. Chen HT. Theory-driven evaluations. Newbury Park, CA: Sage Publications; 1990 1990. 326 p.
25. Stame N. Theory-Based Evaluation and Types of Complexity. Evaluation. 2004;10(1):58-76.
26. Weiss CH. Theory-based evaluation: Past, present, and future. New Dir Eval. sept 1997;1997(76):41-55.
27. De Silva MJ, Breuer E, Lee L, Asher L, Chowdhary N, Lund C, et al. Theory of Change: a theory-driven approach to enhance the Medical Research Council's framework for complex interventions. Trials. 2014;15:267.
28. Mayne J. Contribution analysis: Coming of age? Evaluation. 2012;18(3):270-80.
29. Mayne J. Addressing Attribution through Contribution Analysis: Using Performance Measures Sensibly | Better Evaluation. The Canadian Journal of Program Evaluation. 2001 2001;Sect. 16(1).
30. Pawson R, Tilley N. Realistic Evaluation: SAGE Publications; 1997 1997/06/23/. 260 p.
31. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist review--a new method of systematic review designed for complex policy interventions. J Health Serv Res Policy. 2005;10 Suppl 1:21-34.

32. Blaise P, Marchal B, Lefèvre P, Kegels G. Au-delà des méthodes expérimentales: l'approche réaliste en évaluation. 2010.
33. Pawson R. Evidence Based Policy: A Realist Perspective. SAGE Publications Ltd ed2006 2006.
34. Hawe P, Shiell A, Riley T. Complex interventions: how "out of control" can a randomised controlled trial be? BMJ. 2004;328(7455):1561-3.
35. Hawe P, Shiell A, Riley T. Theorising Interventions as Events in Systems. Am J Community Psychol. 2009;43(3):267-76.
36. Cambon L, Minary L, Ridde V, Alla F. [A tool to facilitate transferability of health promotion interventions: ASTAIRE]. Sante Publique. 2014;26(6):783-6.
37. Schloemer T, Schröder-Bäck P. Criteria for evaluating transferability of health interventions: a systematic review and thematic synthesis. Implementation Science. 2018;13(1):88.
38. Lacouture A, Breton E, Guichard A, Ridde V. The concept of mechanism from a realist approach: a scoping review to facilitate its operationalization in public health program evaluation. Implementation Science. 2015;10(1):153.
39. Ridde V, Robert E, Guichard A, Blaise P. L'approche réaliste à l'épreuve du réel de l'évaluation des programmes. The Canadian Journal of Program Evaluation. 2011;26(3):37.
40. Cambon L, Terral P, Alla F. From intervention to interventional system: towards greater theorization in population health intervention research. BMC public health. 2019;19(1):339.
41. McLellan AT, Kushner H, Metzger D, Peters R, Smith I, Grissom G, et al. The fifth Edition of the addiction severity index: Historical critique and normative data. J Subst Abuse Treat. 1992;9(3):199-213.
42. Denis C, Fatseas M, Beltran V, Serre F, Alexandre JM, Debrabant R, et al. Usefulness and validity of the modified Addiction Severity Index: A focus on alcohol, drugs, tobacco, and gambling. Substance abuse. 2016;37(1):168-75.
43. McLellan T, Carise D, Coyne TH, Jackson TR. Addiction Severity Index - 5th edition. 2019.
44. Has. AddictionSeverity Index - Adaptation française. 2019.
45. Denis C, Fatséas M, Beltran V, Serre F, Alexandre J-M, Debrabant R, et al. Usefulness and validity of the modified addiction severity index: a focus on alcohol, drugs, tobacco, and gambling. Substance abuse. 2016;37(1):168-75.
46. Sheehan DV, Lecrubier Y. The Mini International Psychiatric Interview - Plus (MINI-Plus) 2004.
47. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry. 1998;59 Suppl 20:22-33 (quiz 4-57).
48. Cacciola JS, Alterman AI, Lynch KG, Martin JM, Beauchamp ML, McLellan AT. Initial reliability and validity studies of the revised Treatment Services Review (TSR-6). Drug Alcohol Depend. 2008;92(1-3):37-47.
49. McLellan AT, Alterman AI, Cacciola J, Metzger D, O'Brien CP. A new measure of substance abuse treatment. Initial studies of the treatment services review. J Nerv Ment Dis. 1992;180(2):101-10.

50. Rogers ES, Chamberlin J, Ellison ML. Measure empowerment among users of mental health services. Psychiatric services. 1997;48(8):1042-7.
51. Rogers ES, Ralph RO, Salzer MS. Validating the empowerment scale with a multisite sample of consumers of mental health services. Psychiatric Services. 2010;61(9):933-6.
52. Creswell J, Plano Clark v. Designing and Conducting Mixed Methods Research (3rd ed.). 3rd ed: SAGE Publications; 2017 2017.
53. Gorphe P, Jannin C. Regulatory aspects of prospective and retrospective clinical research in France in 2018. Eur Ann Otorhinolaryngol Head Neck Dis. 2019;136(2):103-8.
54. Cohen E, Feinn R, Arias A, Kranzler HR. Alcohol treatment utilization: findings from the National Epidemiologic Survey on Alcohol and Related Conditions. Drug and Alcohol Dependence. 2007;86(2-3):214-21.
55. Rehm J, Allamani A, Elekes Z, Jakubczyk A, Manthey J, Probst C, et al. Alcohol dependence and treatment utilization in Europe - a representative cross-sectional study in primary care. BMC Fam Pract. 2015;16:90.
56. Lappan SN, Brown AW, Hendricks PS. Dropout rates of in-person psychosocial substance use disorder treatments: a systematic review and meta-analysis. Addiction. 2020;115(2):201-17.
57. Cunningham JA, Sobell LC, Sobell MB, Agrawal S, Toneatto T. Barriers to treatment: why alcohol and drug abusers delay or never seek treatment. Addict Behav. 1993;18(3):347-53.
58. Grant BF. Barriers to alcoholism treatment: reasons for not seeking treatment in a general population sample. Journal of studies on alcohol. 1997;58(4):365-71.
59. Denis C, Fatséas M, Beltran V, Bonnet C, Picard S, Combourieu I, et al. Validity of the self-reported drug use section of the Addiction Severity Index and associated factors used under naturalistic conditions. Substance use & misuse. 2012;47(4):356-63.

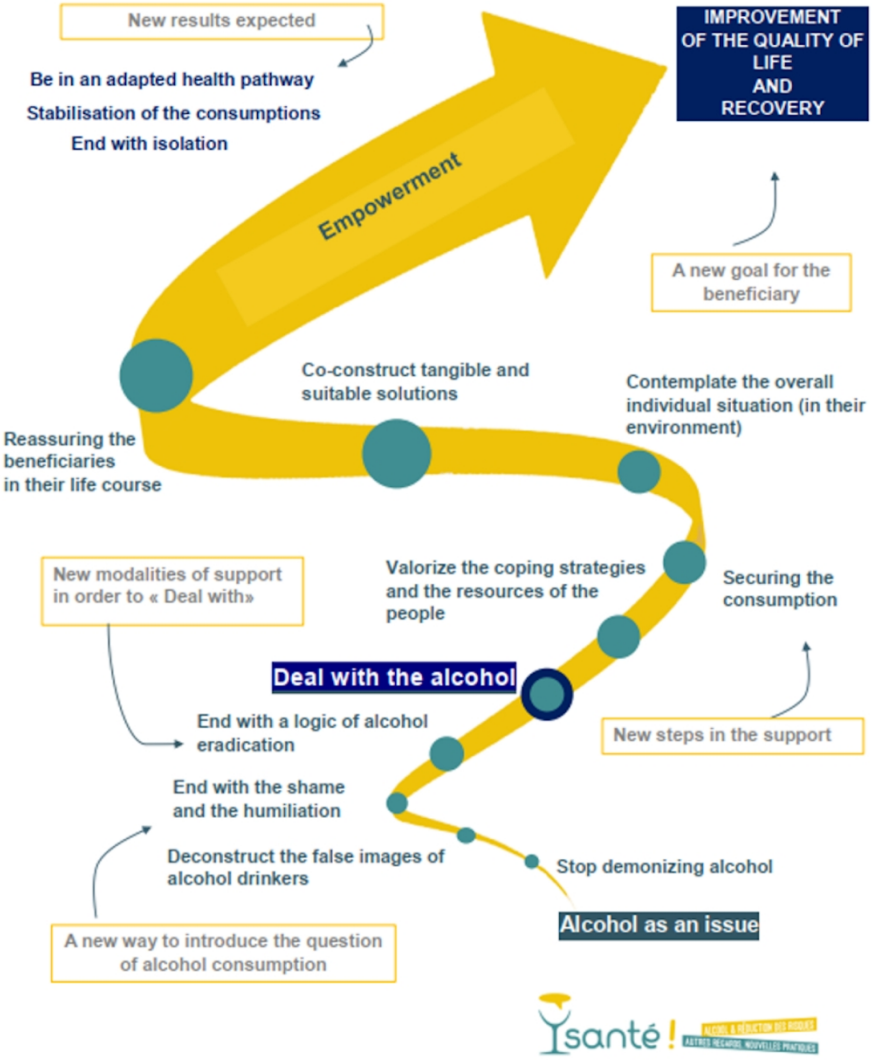

Figure 1: Management process implemented by Santé !
H.B. illustrated and authorized the use of this figure.

127x170mm (300 x 300 DPI)

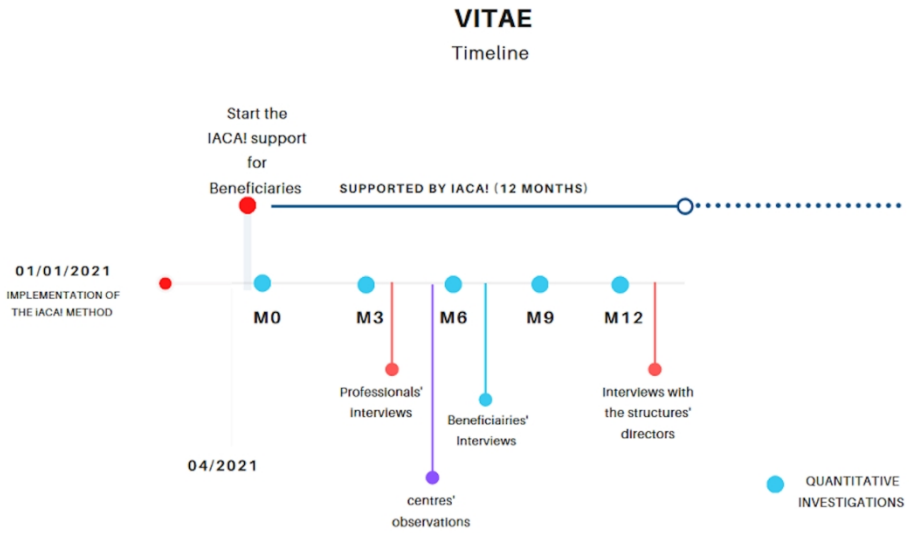

Figure 2: Vitae Timeline
J.M.F. illustrated and authorized the use of this figure.

160x86mm (300 x 300 DPI)

Supplementary Table 1 : List of the centers involved in the Vitae study

Location	Name of the structure	Type of the structure
Nouvelle Aquitaine	Centre la Source Addictions -Mont de Marsan	CSAPA, CAARUD
	Sauvegarde - AGEN	CSAPA
	CEID Addictions (ACT)- Bordeaux	CSAPA
	Domercq SOS – Bordeaux	CHRS
	Association AJIR inclusion – Pau	CHRS
	Association le Lien - Libourne	CHRS
PACA	Casanova – Marseille	CSAPA
	Maison Jaune - Arles	CSAPA
	Insertion La Selonne - Marseille	CHRS
	Soliha - Marseille	IML

Supplementary Table 2 : Variables included in the quantitative investigations

Public	Variables	Questionnaire	Data collection	Time Collection	Population
Beneficiaries	Medical status Employment/support status Substance and behavioral addiction (year of use, number of units use per day, etc.) Family and social relationships Legal status Psychological status	Addiction Severity Index	semi-structured interviews	April 2021 - April 2022	10 centers 10 beneficiaries / centers
	Inventory of the medical, psychosocial and psycho-educational contacts of the subject on the last 30 days	Treatment Service Review			
	Frequency and intensity of craving during the last 30 days for each substance used regularly	Craving Evaluation Scale			
	Assessment of major psychiatric disorders: anxiety disorders, mood disorders, psychotic disorders, addictive disorders and eating disorders)	Mini International Neuropsychiatric Interview			
	Assessment of personal empowerment	Empowerment scale			

Supplementary Table 3 : Data expected in the transferability and viability study and time of collection

Public	Variables	Data collection	Time Collection	Population
Centers and professionals	**Support principles:** Overall support / all dimensions Possibly intensive support Action focused on consumption practices and contexts in a very detailed way (how the person consumes) Unconditional accompaniment with the reality of consumption Adjustment of support to the person's decision-making capacities/security Acting pragmatically to achieve a result ("here and now") Use consumption as a lever Make the team's availability explicit according to the needs of/being at the service of the person: Surround the person with the human, material and institutional resources necessary for his or her care journey, social environment and quality of life Reception of people with alcohol consumption, without any condition of change of consumption; Free approach to alcohol consumption, people's life strategies and skills; Possible offer of alcohol during the accompaniment Positioning affirmed in a break with the traditional system / No control or weaning proposal No abandonment, no judgment, respect/kindness, trust, alliance	Observation Professionals' interviews	October 2021r-April 2022	10 centers 3 professionals/ centers

Professionals	**Professional skills:** Knowledge of the effects of the social norm on life courses Knowledge and experience of the drinking public Skills: • talking about alcohol; • to develop a project/prioritize areas of intervention for people; • observation (identification of the person's needs, benefits, risks, understanding ways of drinking); • to co-construct a program / to seek concrete solutions; • action-research methodology for support (risk-taking/creativity and project/rigor) - experimenting with people; • to sensitize/mobilize partners and resource structures; • alert and monitoring (vigilance on the overall health of people) - anticipation; • to mobilize resources from people; • to interact in a benevolent manner; to coordinate pathways/organizations Knowledge and experience of existing measures necessary to support the person who drinks alcohol (including health) Capacity to: • reinterview his place and role as a professional in the relationship; • propose an accompaniment of a "resultant" or interventional nature; • look more at resources than deficits; welcome in a friendly atmosphere; • maintain constant support (remains anchored in the program/stability); • adapt; convey an optimistic and reassuring vision of the future	Observation Professionals' interviews	October 2021r-April 2022	10 centers 3 professionals/ centers

	Knowledge and experience of situations of social exclusion, discrimination, and lack of care pathways Willingness to work closely with people to integrate their expertise into their own intervention modalities Motivation / desire for involvement Versatility			
Centers and professionals	**Functioning principles:** **External coordination/regulation** **Internal feedback coordination** **Small ratio of people**	Observation Professionals' interviews	October 2021r-April 2022	10 centers 3 professionals/ centers
Centers and professionals	**Contextual environment (micro and macro)** **Political will to fight against legal and illegal drugs, including DDR** **Financial support** **Precise inventory of the health system's offer likely to surround the person/ network of close partners made up of addictology care structures** **Support and regulations favorable to the intervention**	Observation Professionals' interviews	October 2021r-April 2022	10 centers 3 professionals/ centers 1 centers
Professionals and beneficiaries	**Delivery conditions:** **Activities** **Travel to the person's place of residence with work on the rhythm and gestures of daily life** **Staging of the reception (scenography)**	Observation Professionals' interviews Beneficiaries' interviews	October 2021- April 2022	10 centers 3 professionals/ centers

	Co-construction and co-production of approaches to access to care and rights and, more generally, administrative procedures **Decryption of/guidance on the health system and identification of environmental resources** **Telephone contacts (follow-up appointment, maintaining the link, taking news, etc.)** **Logistical preparation / material support (purchase of food, alcohol, etc.)** **Physical accompaniment to medical appointments, with other professionals or with family and friends** **Regular and close individual interviews, but scheduled at a pace to be determined with the person**			
Mechanisms	**Variables**	Data collection	Time Collection	Population
PSYCHOLOGICAL FUNCTIONING:	**Self-acceptance; Personal growth; Autonomy positive relationship; Control of your environment; Meaning of life**	Beneficiaries' interviews Observations Professionals' interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centers 3 Santé! Professionals
EMOTIONAL WELL-BEING	**Positive affect; Quality of life**	Beneficiaries' interviews	October 2021- April 2022	10 centers

		Observations Professionals' interviews		100 beneficiaries 3 professionals/ centers 3 Santé! Professionals
CAPACITIES	**Motivation: Self-determination; Stress management; Putting alcohol in its right place; Effective adaptation strategy**	Beneficiaries' interviews Observations Professionals' interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centres 3 Santé! Professionals
SOCIAL FUNCTIONING:	**Social discounting; Social acceptance; Social contribution; Social coherence; Social integration** **Family and social support**	Beneficiaries' interviews Observations Professionals' interviews	October 2021- April 2022	10 centers 100 beneficiaries 3 professionals/ centers 3 Santé! Professionals

SPIRIT

STANDARD PROTOCOL ITEMS: RECOMMENDATIONS FOR INTERVENTIONAL TRIALS

SPIRIT 2013 Checklist: Recommended items to address in a clinical trial protocol and related documents*

Section/item	Item No	Description		Page
Administrative information				
Title	1	Descriptive title identifying the study design, population, interventions, and, if applicable, trial acronym	√	1
Trial registration	2a	Trial identifier and registry name. If not yet registered, name of intended registry	√	2
	2b	All items from the World Health Organization Trial Registration Data Set	NA	
Protocol version	3	Date and version identifier	√	28
Funding	4	Sources and types of financial, material, and other support	√	29
Roles and responsibilities	5a	Names, affiliations, and roles of protocol contributors	√	1 And 30
	5b	Name and contact information for the trial sponsor	√	1
	5c	Role of study sponsor and funders, if any, in study design; collection, management, analysis, and interpretation of data; writing of the report; and the decision to submit the report for publication, including whether they will have ultimate authority over any of these activities	NA	
	5d	Composition, roles, and responsibilities of the coordinating centre, steering committee, endpoint adjudication committee, data management team, and other individuals or groups overseeing the trial, if applicable (see Item 21a for data monitoring committee)	NA	
Introduction				
Background and rationale	6a	Description of research question and justification for undertaking the trial, including summary of relevant studies (published and unpublished) examining benefits and harms for each intervention	√	4-6

	6b	Explanation for choice of comparators	NA	
Objectives	7	Specific objectives or hypotheses	√	7
Trial design	8	Description of trial design including type of trial (eg, parallel group, crossover, factorial, single group), allocation ratio, and framework (eg, superiority, equivalence, noninferiority, exploratory)	NA	
Methods: Participants, interventions, and outcomes				
Study setting	9	Description of study settings (eg, community clinic, academic hospital) and list of countries where data will be collected. Reference to where list of study sites can be obtained	√	15
Eligibility criteria	10	Inclusion and exclusion criteria for participants. If applicable, eligibility criteria for study centres and individuals who will perform the interventions (eg, surgeons, psychotherapists)	√	16
Interventions	11a	Interventions with sufficient detail to allow replication, including how and when they will be administered	√	11-15
	11b	Criteria for discontinuing or modifying allocated interventions for a given trial participant (eg, drug dose change in response to harms, participant request, or improving/worsening disease)	NA	
	11c	Strategies to improve adherence to intervention protocols, and any procedures for monitoring adherence (eg, drug tablet return, laboratory tests)	NA	
	11d	Relevant concomitant care and interventions that are permitted or prohibited during the trial	NA	
Outcomes	12	Primary, secondary, and other outcomes, including the specific measurement variable (eg, systolic blood pressure), analysis metric (eg, change from baseline, final value, time to event), method of aggregation (eg, median, proportion), and time point for each outcome. Explanation of the clinical relevance of chosen efficacy and harm outcomes is strongly recommended	√	17-21
Participant timeline	13	Time schedule of enrolment, interventions (including any run-ins and washouts), assessments, and visits for participants. A schematic diagram is highly recommended (see Figure)	√	Figure 2

Sample size	14	Estimated number of participants needed to achieve study objectives and how it was determined, including clinical and statistical assumptions supporting any sample size calculations	√	17-21
Recruitment	15	Strategies for achieving adequate participant enrolment to reach target sample size	NA	
Methods: Assignment of interventions (for controlled trials)				
Allocation:				
Sequence generation	16a	Method of generating the allocation sequence (eg, computer-generated random numbers), and list of any factors for stratification. To reduce predictability of a random sequence, details of any planned restriction (eg, blocking) should be provided in a separate document that is unavailable to those who enrol participants or assign interventions	NA	
Allocation concealment mechanism	16b	Mechanism of implementing the allocation sequence (eg, central telephone; sequentially numbered, opaque, sealed envelopes), describing any steps to conceal the sequence until interventions are assigned	NA	
Implementation	16c	Who will generate the allocation sequence, who will enrol participants, and who will assign participants to interventions	NA	
Blinding (masking)	17a	Who will be blinded after assignment to interventions (eg, trial participants, care providers, outcome assessors, data analysts), and how	NA	
	17b	If blinded, circumstances under which unblinding is permissible, and procedure for revealing a participant's allocated intervention during the trial	NA	
Methods: Data collection, management, and analysis				
Data collection methods	18a	Plans for assessment and collection of outcome, baseline, and other trial data, including any related processes to promote data quality (eg, duplicate measurements, training of assessors) and a description of study instruments (eg, questionnaires, laboratory tests) along with their reliability and validity, if known. Reference to where data collection forms can be found, if not in the protocol	√	17-21

	18b	Plans to promote participant retention and complete follow-up, including list of any outcome data to be collected for participants who discontinue or deviate from intervention protocols	NA	
Data management	19	Plans for data entry, coding, security, and storage, including any related processes to promote data quality (eg, double data entry; range checks for data values). Reference to where details of data management procedures can be found, if not in the protocol	√	22-23 & 28
Statistical methods	20a	Statistical methods for analysing primary and secondary outcomes. Reference to where other details of the statistical analysis plan can be found, if not in the protocol	√	22-24
	20b	Methods for any additional analyses (eg, subgroup and adjusted analyses)	√	22-24
	20c	Definition of analysis population relating to protocol non-adherence (eg, as randomised analysis), and any statistical methods to handle missing data (eg, multiple imputation)	NA	
Methods: Monitoring				
Data monitoring	21a	Composition of data monitoring committee (DMC); summary of its role and reporting structure; statement of whether it is independent from the sponsor and competing interests; and reference to where further details about its charter can be found, if not in the protocol. Alternatively, an explanation of why a DMC is not needed	NA	
	21b	Description of any interim analyses and stopping guidelines, including who will have access to these interim results and make the final decision to terminate the trial	NA	
Harms	22	Plans for collecting, assessing, reporting, and managing solicited and spontaneously reported adverse events and other unintended effects of trial interventions or trial conduct	NA	
Auditing	23	Frequency and procedures for auditing trial conduct, if any, and whether the process will be independent from investigators and the sponsor	NA	
Ethics and dissemination				

Research ethics approval	24	Plans for seeking research ethics committee/institutional review board (REC/IRB) approval	√	28
Protocol amendments	25	Plans for communicating important protocol modifications (eg, changes to eligibility criteria, outcomes, analyses) to relevant parties (eg, investigators, REC/IRBs, trial participants, trial registries, journals, regulators)	√	28
Consent or assent	26a	Who will obtain informed consent or assent from potential trial participants or authorised surrogates, and how (see Item 32)	√	28
	26b	Additional consent provisions for collection and use of participant data and biological specimens in ancillary studies, if applicable	NA	
Confidentiality	27	How personal information about potential and enrolled participants will be collected, shared, and maintained in order to protect confidentiality before, during, and after the trial	√	28
Declaration of interests	28	Financial and other competing interests for principal investigators for the overall trial and each study site	√	29
Access to data	29	Statement of who will have access to the final trial dataset, and disclosure of contractual agreements that limit such access for investigators	NA	
Ancillary and post-trial care	30	Provisions, if any, for ancillary and post-trial care, and for compensation to those who suffer harm from trial participation	NA	
Dissemination policy	31a	Plans for investigators and sponsor to communicate trial results to participants, healthcare professionals, the public, and other relevant groups (eg, via publication, reporting in results databases, or other data sharing arrangements), including any publication restrictions	NA	
	31b	Authorship eligibility guidelines and any intended use of professional writers	NA	
	31c	Plans, if any, for granting public access to the full protocol, participant-level dataset, and statistical code	NA	
Appendices				

Informed consent materials	32	Model consent form and other related documentation given to participants and authorised surrogates	√	Supl materials
Biological specimens	33	Plans for collection, laboratory evaluation, and storage of biological specimens for genetic or molecular analysis in the current trial and for future use in ancillary studies, if applicable	NA	

*It is strongly recommended that this checklist be read in conjunction with the SPIRIT 2013 Explanation & Elaboration for important clarification on the items. Amendments to the protocol should be tracked and dated. The SPIRIT checklist is copyrighted by the SPIRIT Group under the Creative Commons "Attribution-NonCommercial-NoDerivs 3.0 Unported" license.